8-2016

A National Survey of Literacy Faculty Practices, Beliefs, and Attitudes Toward Online Courses

Sangho Pang
Clemson University

A NATIONAL SURVEY OF LITERACY FACULTY PRACTICES, BELIEFS, AND ATTITUDES TOWARD ONLINE COURSES

A Dissertation
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy
Curriculum and Instruction, Literacy

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by
Sangho Pang
August 2016

Accepted by:
Dr. David Reinking, Committee Chair
Dr. Linda B. Gambrell
Dr. Danielle Herro
Dr. Amy Hutchison

ABSTRACT

The purpose of this study was to conduct a national survey of literacy faculty (n = 270) in the United States to characterize their practices, beliefs, and attitudes toward offering online courses. Specifically, this study addresses the following questions: (a) To what extent are literacy courses being offered online, who is offering online literacy courses, and under what circumstances? (b) What technological components and pedagogical approaches are being employed in online literacy courses? (c) What are the perceived advantages of online literacy courses and obstacles to implementing them? (d) To what extent are literacy faculty's attitudes favorable or unfavorable toward offering online courses? (e) What factors account for differences in use of, and attitudes about online literacy courses? The analysis of data include descriptive statistics, correlational analysis, and multiple regression analysis. Results indicate relatively higher levels of teaching online literacy courses and somewhat negative attitudes toward online courses. Multiple regression analysis suggested various influences that may contribute to the involvement of literacy faculty in online teaching. That analysis also suggested that simple correlations between predictors and the extent of online teaching, faculty attitudes toward online teaching might be spurious or related complexly to other variables. This study expands understanding of what influences might be relevant in considering the questions guiding the investigation and how they might be addressed to enhance online practices in the field of literacy education. It also lays the groundwork for further research, particularly research that might focus more clearly on variables that predict extent of and attitudes toward online teaching.

ACKNOWLEDGMENTS

Most importantly, I am grateful to Dr. David Reinking. When I first became his student, he was serving as president of the National Reading Conference (Later, the name was changed to the Literacy Research Association), a prestigious national organization in the field of literacy. He was busy at the time, devoted to his responsibilities, including a presidential address at the annual conference of the NRC that I consider the most memorable speech of my life. I would not expect that he had arranged transportation in his hectic schedule for me, an international student with many troubles. Starting with that show of support, I cannot enumerate all of the help and support that I have received from Dr. Reinking. However, here I would like to express my respect and my appreciation for him. As a scholar, he has been a great role model for me and a great writing teacher as well.

I would like to give thanks to my dissertation committee members, Dr. Linda Gambrell, Dr. Danielle Herro, and Dr. Amy Hutchison. I also owe a great deal to many faculty members in the school of Education at Clemson University, including Dr. C.C. Bate, Dr. Pamela Dunston, Dr. Susan King Fullerton, Dr. Jamil Faiza, Dr. Deborah Switzer, Dr. Phillip Wider, Dr. Jacquelynn Malloy, Dr. Suzanne Rosenblith, Dr. Deborah Stevens-Smith, Dr. David Fleming, Dr. Kathy Headley, and especially Margaret Warner, who held my hand whenever I needed it. I have been lucky to have a close bond with Korea University alumni, especially my academic advisor in South Korea, Dr. Myeong-Wan Noh, who encouraged me to study in the U.S.

Finally, thank you to Ji-Seon, my wife, who has devoted her life to me and my lovable two daughters, Seo-Yeon and Seo-Jin, during my doctoral studies. I promise I will be a better dad. I also would like to thank my mom, Young-Sook Yoon, and my parents-in-law, Rak-Jae Lim and Soon-Young Kim, for their understanding and support. I hope we will be together soon!

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CHAPTER ONE

INTRODUCTION

There have been claims that online teaching and learning will replace brick-and-mortar classrooms, particularly in higher education, that were primarily designed for the industrial age education (Carey, 2015; Craig, 2015). Many education reformers take the view that the current model of higher education in the U.S. is a financially inefficient system that includes rising tuition, prolonged time until graduation, high dropout rates, growing class size, the latter of which may lead to a lack of sound pedagogy (Shirky, 2015; Young, 2012). Online teaching and learning is seen as an effective way of addressing these inefficiencies. However, there is also concern that online teaching and learning may greatly disrupt traditional institutions of higher education requiring fundamental changes in all dimensions of the American university (Christensen & Eyring, 2011).

The possibility that many traditional colleges and universities will be substantially disrupted by online teaching and learning has become a more likely reality as they have been compelled to compete with other for-profit entities offering online only programs and degrees. In recent years, Massive Open Online Courses (MOOCs), typically with open and unlimited access to academic lectures via the Internet, have been viewed as a substantial threat to traditional colleges and universities. MOOCs are often described as a *Disruptive Innovation* that "transforms an existing market or sector by introducing simplicity, convenience, accessibility, and affordability where complication and high cost are the status quo" (Clayton Christensen Institute, n.d., para. 2). Shirky (2012) likened

MOOCs to MP3, a popular music format that can shrink the original file on a Compact Disc (CD) as little as $1/10^{th}$ of the original size, which eventually undermined the music industry around CD sales, even though MP3 was not initially viewed as any threat.

Not surprisingly, there are various views and opinions about whether online teaching and learning will lead to a major disruption of higher education. Some refute the threats of MOOCs calling attention to the difference between business and academia (e.g., Bady, 2012; Christensen & Horn, 2013; Lepore, 2014; Liu, 2013; Vaidhyanathan, 2012; Vardi, 2012). Others point out that MOOCs may not result in a major shift in the pattern of higher education due to shortcomings such as low completion rate, lack of live interaction and effective pedagogy, and, for the present, a lack of recognition for online certificates, diplomas, and digital badges (Vaidhyanathan, 2012).

Nonetheless, in striving to address the potential threat of online teaching and learning, American universities have embraced online teaching and learning as an opportunity. They are absorbing it as a groundbreaking and potentially useful innovation, sometimes embracing it as a transformative disruption (Christensen & Eyring, 2011; Horn, 2014). Top universities such as MIT, Harvard, Princeton, and Stanford University are aggressively embracing MOOCs (MacGregor, 2013; Webley, 2012). Many institutions are employing and experimenting with a variety of online instruction models, including a hybrid or blended model in which courses are delivered partly in a conventional classroom and partly online, capitalizing on the best of both approaches (Shin & Lee, 2009), while maintaining quality pedagogy and effective learning at a reduced cost.

Given these trends, online courses of higher education have been rapidly increasing. Results of a recent national survey that track twelve years of online education indicate that the proportion of students enrolling in at least one online course has been continuously growing from 9.6% in 2002 to 33.5% in 2012 (Allen & Seaman, 2014). In 2013, most colleges and universities (95% of institutions with 5,000 to 9,999 enrollments; 98% with 10,000 to 19,999; and 100% with more than 20,000) offered some online classes (Allen, Seaman, Hill, Poulin, & Straut, 2016), and in the same year, 7.1 million students of higher education took at least one online course (Allen & Seaman, 2014). As a result, many institutions need a sufficient number of faculty members who are willing and competent to offer and teach online courses.

Statement of the Problem

Online teaching and learning alters the traditional structure of higher education. The distinctive nature of online communication (e.g., group-based, time- and place-independent, text-based, and media-enriched) changes the relationship of students to their instructors and to the content of the curriculum (Harashim, 2000). In this unique environment, online instructors are often required to transform their practices (Andrews, 2011). For instance, online faculty members may more likely take an instructor role of facilitator, challenger, affirmer, or co-learner than a role of authority, expert, or knowledge transmitter (Edwards, Perry, & Janzen, 2011). Some researchers even believe that online teaching compels instructors to alter their teaching philosophy and internal beliefs about teaching, instruction, course, and students (Major, 2010). The

transformation of teaching philosophy and methodology of practice entails fundamental challenges.

A considerable investment of time and effort is needed for instructors if they are to adjust to the fundamental challenges posed by online teaching and learning. Baran, Correia, and Thompson (2011) argued that critical reflection and action are inevitable for instructors to embrace the changes and manage the challenges of teaching in online environments. That additional effort has been reported as one of the most significant obstacles faculty members of higher education are faced with in teaching online (Allen et al., 2016; Smith, Passmore, & Faught, 2009), which may account for instructors' resistance to accepting online teaching (Allen et al., 2016; University Leadership Council, 2010). That resistance is widespread enough that many institutions are experiencing difficulty recruiting a sufficient pool of faculty members who are willing to offer and teach online courses (University Leadership Council, 2010). It may also explain why faculty candidates are increasingly advised to have online teaching experience to be more competitive in the academic job market.

Teacher education programs are experiencing even greater challenges regarding online teaching and learning, because teacher preparation has been criticized for its failure to attract high quality candidates, having the same high cost of tuition as other programs, not being able to solve teacher shortages, and most of all, not being able to prepare teacher candidates for success in the classroom (Darling-Hammond, 2010; Liu, 2013). With the Every Students Succeeds Act (ESSA), which is known to support alternative routes to teacher preparation, the situation is expected to get worse

(Eduventures, 2016). In response to the challenges, many schools of education are increasingly required to innovate and experiment with alternative models for both increasing access to their programs and ensuring the quality of their programs.

Due to those greater challenges, online teaching and learning presents an opportunity to cope with the current difficulties that teacher education programs face (Liu, 2013). Online education is already permeating teacher education programs. Toppo and Schnaars (2012) pointed out that online for-profit schools such as Phoenix and Walden University were awarding significantly more education degrees through their online programs than the traditional education schools in 2011. They noted that traditional schools offering education degrees all or partially online also have become more popular. Online teacher education programs are "skyrocketing" (Toppo & Schnaars, 2012).

As a result, teacher educators in traditional colleges and universities are increasingly required to take a more active role in offering and teaching online courses. However, many teacher educators as well as school principals remain sceptical of online teacher education programs (Liu, 2013). Some view online teaching and learning as a viable option to get through the crisis of the current model of teacher education, yet many are taking the view that online teaching and learning creates another significant challenge to teacher education because of the loss of nuanced dialogue and personal, intimate interaction, which has been described as one of the most vexing issues for many teacher educators (Edmundson, 2012).

Online teaching and learning for literacy teacher education is also part of this trend. Recently, the two editors of *Reading Research Quarterly* (R.R.Q.), the most prestigious journal in the field of literacy, described online learning as an important disruptor and suggested that literacy faculty embrace this disruptor as an opportunity for educating every teacher as a skilled practitioner of literacy (Newman & Gambrell, 2015). Literacy teacher educators are increasingly recognizing online teaching and learning for its potential to improve literacy teacher education, with its challenges as well (Bean & Morewood, 2011; Clarke & Watts-Taffe, 2013). Substantial interest in preparing and educating literacy teachers online has arisen, but little is known about how literacy teacher educators are dealing with those potential benefits and challenges that online teaching and learning may produce (Clarke & Watts-Taffe, 2013).

Specifically, after Anders, Hoffman, and Duffy (2000) called for, at the turn of the 21st century, more of researchers' attention to reading teachers' learning and their classroom practices than the process and learning of reading itself, literacy researchers have made persistent efforts to improve the quality of literacy teacher education and professional development programs. Several research syntheses were completed as a result of those efforts (Dillon, O'Brien, Sato, & Kelly, 2011; Risko, et al., 2008; Snow, Griffin, & Burns, 2007). Each synthesis offers useful insights into literacy teacher education, and suggests research- or evidence-based practices in literacy teacher education (Bean & Morewood, 2011).

Many of these teaching practices are unique to literacy teacher education (e.g., guiding teachers to understand the role of reader's schema in comprehension, and

demonstrating teacher read-aloud for enhancing students' comprehension). Supposing that such unique practices are increasingly translated into online learning spaces, literacy researchers need to provide information on the ways in which the unique content, instruction, and assessment are delivered in online teaching and learning, as well as the benefits and challenges literacy teacher educators may face. That data would allow for thoughtful responses to the practical demands of literacy teacher educators experiencing the changes afforded by online teaching and learning, and help these educators make necessary adjustments to online environments. Such reflection, consideration, and comparison on their instruction in each course format will create greater opportunity for literacy teacher education, either in traditional or online format, to grow in productive ways (Major, 2010; Mckenzie, Mims, Bennett, & Waugh, 2000).

Toward that end, more detailed studies are needed for discussions on how online teaching and learning may alter literacy faculty's practices and beliefs about teaching, instruction, course, and students, and how the transformation of beliefs and the methodology of practice would lead to any benefits or fundamental challenges in educating literacy teachers online. Although, much has been studied about the potential advantages and disadvantages of online learning in higher education, little is known about online practices in teacher education that are pertinent and unique to educating literacy teachers (Alvermann, Rezak, Mallozzi, Boatright, & Jackson, 2011; Boling, 2005; Clarke & Watts-Taffe, 2013), which is information that the present study provides.

Purpose of the Study

The purpose of this study was to better inform those who are considering, designing, and implementing online courses in the field of literacy, and open up discussion with educators and researchers who are interested in relevant issues of online literacy courses. Toward that end, a national survey of literacy faculty was conducted to:

1. characterize the extent to which literacy courses are being offered online in the U.S, who is offering such courses, and under what circumstances,
2. characterize what technological components and pedagogical approaches are being employed,
3. determine perceived advantages and limitations of online literacy courses, and obstacles to implementing them,
4. determine the extent to which attitudes are favorable or unfavorable toward offering them,
5. determine what factors or influence are associated with higher levels of teaching online literacy courses and positive attitudes.

The collection of this data is especially important to literacy teacher educators because the results of analyses will inform those who are considering, designing, and implementing online courses in the field of literacy education. This study may also open up a needed dialogue about the utility, practicality, effectiveness, and appeal of online literacy courses.

Methodological Approach

This study employs survey methodology, which is recognized as relevant to literacy research (Bauman & Bason, 2011). The survey research, a commonly used

methodology, is mostly used to make generalizations about the population from a sample by employing a probability sampling method (Bauman & Bason, 2011). A survey instrument was developed to gather descriptive data characterizing the circumstances and extent of online courses taught by literacy faculty in education programs and to explore factors that might be related to and thus explain variations in use and in beliefs and attitudes about offering and teaching online literacy courses.

Key Terms

Online Course

Online course is defined as a unit of teaching that typically lasts one academic term, in the context of higher education, and is implemented using digital media that allows participants to learn together without a physical proximity and accommodates students' schedules (usually within timelines established by instructors) (Clarke & Watts-Taffe, 2013). Due to a variety of delivery format, the following illustrates the types of courses classified in this study.

- Online course: a course that is taught predominantly online using digital media, with few, if any, face-to-face, physical meetings of the instructor with enrolled students.
- Hybrid course: a course that has a predominant online component using digital media, but that also entails some regular face-to-face physical meetings of the instructor and enrolled students.
- Traditional course: a course that is organized around regular face-to-face, physical meetings of an instructor (or instructors), usually in a classroom, although it may

entail some online activities (e.g., email, online discussion, web-based video clips, etc.).

Literacy Faculty

Literacy faculty is operationally defined as those who are offering and teaching any literacy courses. Literacy course is one associated with current instructional and assessment methods on literacy that is offered in a program, department, school, or college of education. A literacy course focuses on understanding literacy in relation to how it might be developed in an educational or related context. However, the boundary between disciplines and teaching responsibilities may be blurred and the term literacy has many meanings (Barton, 2007). For this purpose, one item was included in the beginning of the survey to ask whether respondents consider their position or faculty role to be identified mainly with literacy education.

Pedagogical Approaches

Pedagogical approaches is used interchangeably with, and often confused with pedagogical beliefs, practices, and strategies. For instance, it is hard to say whether such concepts as teacher-directed, student-centred, project-based, case-based, behaviourist, or constructivist fit into the category of pedagogical beliefs, practices, strategies, or approaches. For the purpose of this study, pedagogical approaches are defined as overall perspectives of teaching and learning and are assumed to be expressed with two constructs: their overall orientation of instruction, and their perceived roles as an instructor.

- Overall orientation: This construct reflects two conflicting paradigms for college teaching: old, traditional vs. new, constructivist orientation. Traditional orientation views knowledge as transferred from faculty to students, whereas constructivist orientation views knowledge as jointly constructed by students and faculty (Fink, 2013, p.19).
- Instructor's role: Faculty's perception about their responsibilities, tasks, or duties as an instructor. Many metaphors have been used to encompass a variety of roles as an instructor such as trainer, helper, coordinator, and mentor. This study assumed that traditional vs. constructivist orientation may guide different kinds of roles as an instructor.

Chapter Summary

In this chapter, an introduction to the study, a statement of the problem, the purpose of the study, and the definition of key terms were provided. This study aims to serve as a guide for teacher educators and researchers who are involved in literacy teacher education in online settings. I hope that this study will open up a needed dialog about the utility, practicality, effectiveness, and appeal of online literacy courses. In the next chapter, a review of literature is provided to understand important issues related to online courses, particularly with regard to literacy teacher education.

CHAPTER TWO

A REVIEW OF THE LITERATURE

This chapter discusses the literature related to online literacy courses offered in universities and colleges. The research purposes presented in Chapter 1 were turned into research questions that consist of following section headings and organize this chapter: (a) To what extent are literacy courses being offered online? (b) Who is offering online literacy courses and under what circumstances? (c) What technological components and pedagogical approaches are being employed in online literacy courses? (d) What are the perceived advantages and the perceived obstacles to developing and teaching online literacy courses? (e) To what extent are literacy faculty's attitudes favorable or unfavorable toward online courses? The literature review aimed to provide an overview under each of the section headings, which also provided the rationale behind the survey development summarized in Chapter 3.

To What Extent Are Literacy Courses Being Offered Online?

This section reviews the literature that attempts to estimate the extent of online offerings with several approaches at the national level, and investigate how the extent of online offerings varies for the field of teacher education in general and literacy education in particular. The review aims to provide a glimpse of the current state of online literacy education in the U.S.

Extent of Online Offerings in Higher Education

The extent to which online literacy courses are being offered can only be understood in comparison to the extent to which online courses are being offered in

general within the larger context of higher education. Due to differing definitions of online offerings, it is difficult to exactly estimate and track the extent to which online courses are being offered. Several studies have tried to provide that information at the national level. However, each estimate from the studies should be cautiously compared and interpreted due to different approaches to data collection and different definitions of online offerings.

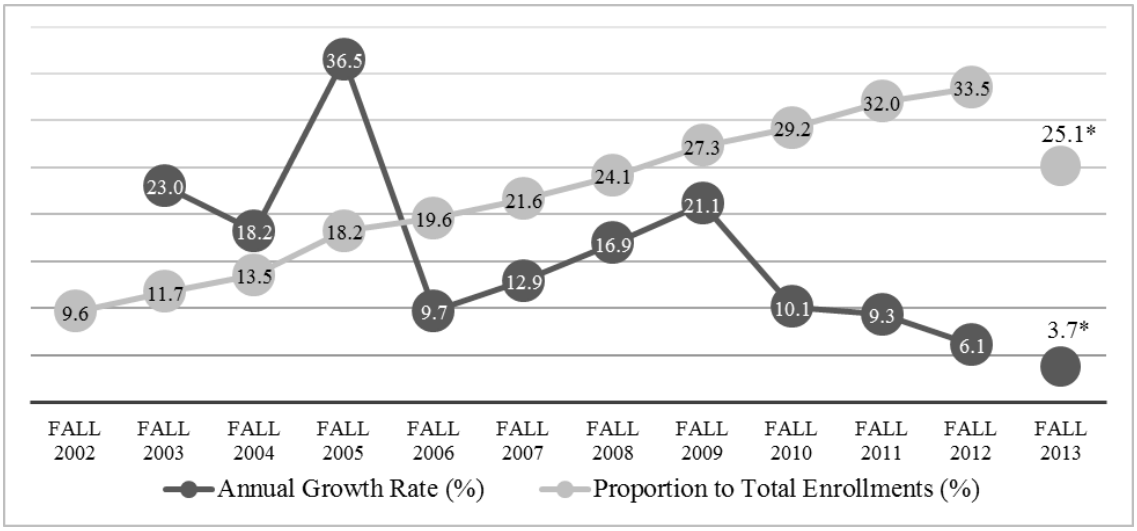
One approach that several studies have employed is to investigate the proportion of institutions with or without online offerings. That approach is relatively simple, and the results produce limited information. For instance, Kim and Bonk (2006) conducted a national survey of 562 college instructors and administrators and reported that 87% of respondents' institutions were offering online courses to some extent. That level of institutional participation might be inflated because their survey participants were selected by consulting the membership rolls of two national associations for online education: Multimedia Educational Resource for Learning and Online Teaching (MERLOT) and Western Cooperative for Educational Telecommunications (WCET). Thus, the respondents were more likely instructors or administrators working in institutions with online offerings. More recently, Bichsel (2013) reported that more than 80% of institutions are providing at least several online courses, and more than half of the institutions were offering a significant number of online courses in 2013. However, like Kim and Bonk (2006), the survey data were obtained from 311 member institutions of a professional organization whose mission is to transform higher education through the use

of information technology (EDUCAUSE, http://www.educause.edu/about/mission-and-organization). Thus, that level of institutional participation might be inflated as well.

An estimate based on the National Center for Education Statistics (NCES)'s Integrated Postsecondary Data System (IPEDS, http://nces.ed.gov/ipeds/) might be currently most precise and accurate, because that dataset included almost every postsecondary institution in the U.S. According to IPEDS's data, 70.7% of postsecondary institutions were providing some distance (online) courses in 2013 fall (Allen & Seaman, 2015). The IPEDS's data also indicated that nearly every public post-secondary institution was offering some distance courses or programs. From these results, it might be concluded that institutions in the U.S. are increasingly embracing online education. Nonetheless, there may be differences in the adoption or diffusion of online teaching and learning among students and instructors, and these differences would provide a more nuanced understanding of the extent to which online courses are being offered.

Thus, another approach would be to consider the number of students enrolled in online courses. Specifically, the total number of students taking at least one online course has been researchers' primary interest. Given that there are various options of online courses or programs in higher education that they are difficult to be equally weighted, that approach might be the most reasonable and viable option available to provide a glimpse of how online learning is spreading among students in higher education. Taking that approach, the Babson Survey Research Group (BSRG) tracked 12 years of online education in the U.S. since 2002. One of the indicators they tracked is the total number of students taking at least one online course. Further, they searched for the growth rate of

online enrollments and its proportion to the total enrollments in higher education (Allen & Seaman, 2014, 2015). Recently, Allen and Seaman (2015) switched to the IPEDS's data for the enrollment indicator because the IPEDS' data cover almost all institutions participating in federal higher programs in the U.S, and tie to the full set of institutional data already reported to the National Center for Education Statistics (NCES). As a result, the data from the Fall of 2013 are not comparable with the findings from the previous BSRG data due to differing definitions and sampling methods (Allen & Seaman, 2015). This caveat should be considered even though they suggested that limited comparisons can be made because the two datasets are similar and address the same issue of at-least-one online (distance) course enrollments. Figure 2.1 summarizes the annual growth rate of online enrollments and the proportion of students enrolling in at least one online course when compared to total enrollments across the two datasets.



*A different dataset (IPDES) was used for the analysis of 2013 fall.

Figure 2.1. Annual growth rate of online enrollment and proportion of at-least-one online enrollment to total enrollments (adapted from Allen & Seaman, 2014, 2015).

Figure 2.1 shows that the total number of students enrolling in at least one course online has been continuously growing in colleges and universities and its proportion to total enrollments has steadily increased except in the fall of 2013. However, the rate of growth in online enrollments declines after 2009. Part of reason that the proportion of online enrollment and the growth rate are lower than the previous years is because IPEDS' definition of distance (online) courses was stricter than the one that BSRG has used (Allen & Seaman, 2015). IPEDS' data only counted a distance course as part of a degree program while BSRG included any distance course. Ruling out the 2013 analysis, the proportion of students enrolling in at least one course online peaked at 33.5 % in 2012, but the growth rate (6.7 %) was the lowest since 2002.

Interestingly, with the same data, in light of the current situation, predictions about the future of online education in colleges and universities may be mixed and contradictory. Some believe that online education is still growing rapidly at colleges and universities in the U.S., (Horn, 2015; Nagel, 2011; Vista Success; 2014), reaching a tipping point (Bidwell, 2014) after which employers will begin to trust the quality of online degrees (Calderon & Sorenson, 2014). Others suspect that the growth of online education is slowing down overall or growing rapidly only in a few specific schools, and maybe halting permanently in the near future (Haynie, 2015; Hill, 2015).

Another issue is instructors' participation rate in online education. Asking how many instructors are teaching at least one online course is another way to grasp the extent of online offerings. Kim and Bonk (2006) reported that about 70 % of their survey respondents had taught online courses, but that percentage may be inflated due to the

sampling process described previously in this section. More precisely, a recent Gallup survey of 2,251 faculty members reported a minority of the professors (26.8 %) having taught at least one online course in 2013 (Gallup, 2013). It is interesting to note that the percentage of professors teaching at least one online course (26.8 %) as reported in the survey is quite similar to the students taking at least one online course (25.1%) in IPEDS's data at the same year of 2013, even though Gallup (2013) did not sample all the institutions unlike IPEDS's data. The BSRG data also have traced faculty acceptance of online education (Allen & Seaman, 2015). However, the BSRG data is based on academic leaders' perceptions. Also noteworthy is that 28.0% of academic leaders perceive that their faculty accept the value and legitimacy of online education. Despite these data, it is difficult to precisely track trends of instructors' participation in online courses because there is no research that has monitored faculty members' adoption of online teaching over time at the national level.

Extent of Online Offerings in the Discipline of Education

To what extent are courses being offered online, particularly in the field of education? Are these online offerings in the field of education increasing or decreasing? Is the growth, if increasing, faster or slower when compared to other disciplines? Unfortunately, there is a dearth of research addressing these questions, but a few studies shed light on the extent of online offerings in the discipline of education.

Allen and Seaman (2008) reported that at the time of their study the extent of online offerings was not much different when disaggregated by disciplines in higher education. Among eight disciplines, business was at the top, education was in the middle

range, with engineering near the bottom in the extent of online offerings. Although there was no clear implications for the extent of online offerings, Ansah, Neill and Newton (2011) revealed that faculty of education and nursing were more involved and interested in online education than other disciplines, at least in public four-year institutions. They also suggested that education and nursing were leading disciplines that might mentor and model online education for other schools (Ansah, Neill, & Newton, 2011).

According to Shin and Lee (2009), online education has already been situated as a significant development and a reasonable strategy for teacher preparation. Several reasons have been offered to explain why an increasing number of students are drawn into online courses and programs in the field of education. For example, there is a great need to increase the number of graduates in education (Ansah, Neill, & Newton, 2011) to address teacher shortages (Olson & Werhan, 2005). Education also attracts older adult learners such as students pursuing teacher certification or professional development after having graduated from a teacher preparation program (Ansah, Neill, & Newton, 2011).

Toppo and Schnaars (2012), based on NCES data, pointed out that online, for-profit schools such as Phoenix University and Walden University were awarding significantly more degrees in education through their online programs than the traditional education schools in 2011. They noted that traditional schools offering education degrees all or partially online also became more popular, perhaps because they may feel a need to compete with these new options. Further, the NCES data clearly shows that there has been a large increase in online teacher education programs during the previous decade (Toppo & Schnaars, 2012).

Extent of Online Literacy Courses

It is difficult to determine the number of students enrolled in online literacy courses and the proportion of institutions with or without online literacy programs or courses. However, the extent of online courses and programs that aim to prepare and educate literacy teachers or other literacy professionals may be part of the growing trend in online teacher education (Clarke & Watts-Taffe, 2013). Research indicated that an increasing number of literacy faculty are employing online courses for transforming literacy teacher education in various ways beyond just moving traditional courses online (Turbill, 2002). Students are engaged in various literacy practices beyond those provided in a face-to-face classroom (e.g., words, symbols, and actions in Woodcock, 2009) including the practices of new literacies (e.g., multimodal texts in Karchmer-Klein & Shinas, 2012 and Blogging in Tracy, Scales, & Luke, 2014), creating teaching videos and sharing them with peers for feedback (Sharma & Pang, 2015), and creating a literacy-rich community based on online interaction (Peterson & Slotta, 2009).

Little is known about the extent of online offerings in higher education with respect to literacy education in particular. This study aims to provide that information.

Who is Offering Online Literacy Courses and Under What Circumstances?

This section discusses what characteristics of institutions, academic units, and literacy faculty, in the literature, are associated with the extent of teaching online courses. Demographic and other variables that have previously been identified in the literature as influences on online teaching and how they might enhance or hinder online teaching are reviewed.

Institutional Characteristics and Circumstances

According to the IPEDS data, Allen and Seaman (2015) found that there is a strong relation between the total number of student enrolled and an institution's online offerings. The IPEDS data show a dramatic difference in the proportion of institutions with online offerings when considering institutions of different size. Nearly every institution with more than 20,000 enrollments and 95% of institutions with between 10,000 and 19,999 students offer online courses or programs to some degree, whereas 83.6% of institutions with between 1,000 and 4,999 enrollments and even 47.5% of institutions with less than 1,000 students reported some online offerings.

Allan and Seaman (2015) noticed that those institutions with less than 1,000 enrollments are mostly composed of private institutions. That result is consistent with EDUCAUSE's national survey on the state of e-learning in higher education (Bichsel, 2013), which indicated that the percentage of public institutions with significant online offerings (68%) are twice the percentage of private institutions (36%). Allan and Seaman (2015) also found that it does not make much difference in the proportion of institutions with online offerings whether public institutions are 2 or 4 years. However, two-year private intuitions offer online programs much less than four-year private institutions. Whether the private institutions are for-profit or not-for-profit made little difference. These results suggest that the proportion of institutions with or without online offerings is a complicated issue when such institutional characteristics are considered.

Some researchers have examined the extent of online offerings based on institutional categories such as Carnegie systems of classification. Bichsel (2013) found

that Associate Colleges (AA), who mainly offer associate's degree and certificate programs but the fewest baccalaureate degrees, have a high proportion of institutions with online offerings. That result is consistent with a few studies reporting that online enrollments at community colleges are continuously increasing (Cejda, 2010; Jaggars & Xu, 2010; Xu & Jaggars, 2011). IPED data also reported that institutions categorized as degree-granting, not primary baccalaureate or above offer more online courses, followed by degree-granting, primary baccalaureate or above, degree granting, associate degrees and certificates, and degree granting, graduate with no undergraduate. Nonetheless, it is difficult to find a consistent trend in the extent of online offerings based on institutional categories due to the differing definition of online offerings and institutions.

Another series of studies attempted to understand under what circumstances instructors of higher education likely participate in online teaching. Researchers concluded that instructors who are not adequately supported by training, technical support, assistance for course development and teaching, incentives, and additional compensation may be less involved in online teaching. Institutional mission, policies, technological infrastructure, and prevalence of online courses at institutional level also seem to affect instructors' adoption of online teaching (Betts & Heaston, 2014; Bower, 2001; Feist, 2003; Frith & Kee, 2003; Levenburg & Major, 2000; Meyer & Barefield, 2010; Rhode & Krishnamurthi, 2016; Rockwell, Schauer, Fritz, & Marx, 2000; Simpson, 2010; Tallent-Runnels et al, 2006). However, there have been no studies specifically investigating what institutional supports and incentives are available to online literacy

instructors and how such factors might enhance or hinder online teaching, which is a gap in information that this study will fill.

Faculty Characteristics

Faculty characteristics such as age, gender, teaching experience, teaching level, academic rank, tenured/non-tenured, technological skills and competence, and their belief, perception, and attitude about technology have been investigated as factors related to technology integration either in traditional or online instruction (Ertmer, 2005; Osika, Johnson, & Buteau, 2009; Peluchette & Rust, 2005; Rockwell, Schauer, Fritz, & Marx, 2000). For instance, some studies reported that male (Spotts, 1999), younger and non-tenured (Peluchette & Rust, 2005), or technologically competent (Goral, 2000) instructors are more likely motivated to integrate technologies into their instruction. On the contrary, McKinley (2011) revealed that faculty demographic characteristics (age, gender, and tenure) do not have a significant influence on technology integration; attitude, however, is a significant factor accounting for greater technology integration in the classroom.

Nonetheless, little is known about if the influence of faculty characteristics on technology integration would be extended to the extent of online teaching where technology integration is obviously central. Only a few studies provide information about the relation between faculty characteristics and the extent of online offerings at the national level. These studies do not provide robust results, but enable a glimpse of online instructors' characteristics on average in higher education. For instance, a national survey found that more women were teaching online than men (Kim & Bonk, 2006), which was an unexpected result because male instructors who were full professor at tier-one

universities, dominated online teaching in their previous study (Kim & Bonk, 2006). Kim and Bonk (2006) inferred that female instructors had become more familiar and comfortable with online resources and pedagogy. Similarly, Mandernach, Register and O'Donnell (2015) provided a profile of online adjunct faculty from a sample. They identified more female adjuncts were teaching online than male adjuncts. However, their results of gender difference in the extent of online teaching are difficult to generalize given the limitations of their sampling method and survey design. Rockwell, Schauer, Fritz, and Marx (2000) found that the way instructors perceive education, assistance, and support for online teaching differed on such factors as: (a) academic status, (b) teaching experience, (c) online teaching experience, (d) tenured or non-tenured, and (e) teaching undergraduate or teaching graduate classes.

Besides these various previously investigated factors, researchers are raising the possibility that social constructivist pedagogy (Vygotsky, 1978) has an influence in accepting and adopting online teaching. Many researchers have suggested that the social constructivist pedagogy should be applied in online education (Harashim, 2012). Particularly, the social constructivist approach has had a pronounced influence in various aspects of practice and research in the discipline of literacy (Au, 1998; Oldfather & Dahl, 1994; Wilkinson & Silliman, 2001). Clarke and Watts-Taffe (2013) assert that "many literacy teacher educators are interested in the ways in which sociocultural, constructivist theories of learning are enacted in online learning spaces" (p.7). However, there is no empirical evidence that would support the assertion that faculty members who are oriented to the social constructivist pedagogy may more readily accept teaching online.

This study will provide a profile of how literacy instructors who are teaching online conform to or diverge from these faculty characteristics.

What Technological Components and Pedagogical Approaches Are Being Employed?

As web 2.0 and other technologies have expanded during the previous decade, numerous tools and technologies are being integrated into teaching and learning (Fahser-Herro & Steinkuehler, 2009). Regardless of educational level, format, or subject area, having so many technologies and tools readily available can be engaging and empowering, but simultaneously it can be challenging, overwhelming, and intimidating. Given that the increased availability of various technologies and its potential influence on teaching and learning in higher education, the current state of faculty use of technologies, particularly in their online instructions, has been an important subject of study. This section reviews the literature about faculty's technology use in their instruction, extent of technology use, factors that may have an impact on the selection of technologies, and differences between traditional and online courses in terms of technology use.

This section also reviews the literature about pedagogical approaches, which are enacted in various instructional practices in the classroom. Pedagogical approaches refer to the overall perspectives of teaching and learning, which are enacted in various instructional practices in the classroom. Pedagogical approaches are used interchangeably with, and often confused with pedagogical beliefs, practices, and strategies. For instance, it is hard to say whether such concepts as teacher-directed, student-centred, project-based, case-based, behaviourist, or constructivist fit into the category of beliefs, practices,

strategies, or approaches. For the purpose of this study, pedagogical approaches were defined as faculty members' perceptions about their instruction (see Chapter 1 for the definition), and they are assumed to be expressed as two constructs: (a) their overall orientation of instruction, and (b) their perceived roles as an instructor. Literature related to these two constructs is reviewed in this section, particularly in connection with online courses for literacy education.

Faculty Members' Technology Use

Overall, faculty members are increasingly embracing a variety of technologies. A national survey of 4,564 faculty members reported that 43% of respondents create digital teaching material, open educational resources, or lecture capture, which refers to recording lectures and embedding those videos for students' future reference, at least occasionally (Allen, Seaman, Lederman, & Jaschik, 2012). More recently, a large-scale survey of 17,451 faculty members, using a series of 100 point semantic differential scales, revealed means at relatively high level of technology use (72 points), positive attitudes toward (70 points), and positive dispositions toward technology (65 points) (Dahlstrom & Brooks, 2014).

On the other hand, researchers point out many faculty still show reluctance and even resistance in employing innovative technologies for their instruction. However, depending on their perception of technology use, which is not necessarily accurate, a survey of 3,971 faculty members at two- and four-year institutions in the U.S. revealed that most respondents (40 to 60 %) fall into the category of "familiar, but not relevant or have not tried" in regard to adoption of a variety of technology oriented teaching methods

(FTI Consulting, 2015). Of the respondents, for example, 56% are familiar with video conferencing, but have not used these tools. Only 15% actually employed video conferencing in their classroom for encouraging interaction. The results suggest that lack of familiarity may not be a main reason for the reluctance to technology adoption in higher education.

Furthermore, the adoption of specific technologies in higher education remains uneven. For instance, more than 80% of faculty members are using a Learning Management System (LMS), only for its basic features and functions such as sharing a syllabus and routine communication with students (Allen, Seaman, Lederman, & Jaschik, 2012; Dahlstrom & Brooks, 2014; FTI consulting, 2015; Jaschik & Lederman, 2013). Forty-one percent of faculty members make use of social media such as Facebook, Twitter, and Blogs in their teaching (Seaman & Tinti-Kane, 2013). Only about 20% of faculty members are using lecture capture (Allen, Seaman, Lederman, & Jaschik, 2012; Jaschik & Lederman; 2013). Electronic quizzes and real-time interaction including Skype are used by less than 20% of faculty members (FTI consulting, 2015).

The barriers or obstacles such as time for development of online courses, institutional policy, technology availability, ease of access, and lack of training and support have been reported to be associated with the reluctance of faculty and the degree to which they integrate technologies in higher education (Adams, 2002; Antonacci, 2002; Kagima & Hausafus, 2001, Leggett & Persichitte, 1998). However, the literature reveals that teachers' beliefs and attitudes are related to classroom technology practices (Ertmer,

2005; Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur, & Sendurur, 2012; Kim, Kim, Lee, Spector, & DeMeeester, 2013).

Thus, the use of technology effected by faculty's pedagogical beliefs and approaches, which are detailed in the this section, may account for the extent to which faculty members are integrating technologies for enhancing their teaching and students' learning and why such technologies are differentially preferred. As Reeves, Herrington and Oliver (2005) pointed out, many studies involving instructional technology in higher education continue to focus on effectiveness of the delivery medium itself, rather than the instructional approaches underlying teaching and learning. They argued that researchers need to put a higher priority on questions such as: What are the characteristics or factors of teachers that are closely associated with specific technologies they select and use? Which instructional or pedagogical approaches are likely employed with specific technologies? How do they facilitate teaching and learning with those technologies? The present study aims to reveal such relationships between use of specific technologies and faculty's pedagogical beliefs and approaches.

Online Faculty's Technology Use

The availability and use of technology was limited when online education was first considered because there were only a few relatively simple technologies available such as E-mail, computer conferencing, and bulletin boards (Harashim, 2000). Today, however, faculty are experimenting with a wide array of technological tools and integrating them into their courses to support quality teaching and effective learning in an online environment. According to Allen, Seaman, Lederman, and Jaschik (2012), faculty

members who teach online and/or blended courses, obviously, use more digital materials such as simulations and videos in course presentations, and they use more of the available functions and tools of LMS.

It would be easy to assume that online instructors, with their greater use of technology, are broadening their pedagogical options and thus expanding students' leaning opportunities. However, several studies reveal that faculty's existing pedagogical approaches drive what technological components are employed in online courses and how they are used to facilitate teaching and learning (e.g., Harashim, 2012; Kim & Bonk, 2006). Kim and Bonk (2006) found that online instructors, in their initial efforts, preferred content or content-delivery technologies associated with a knowledge-transmission based approach. More recently, Harashim (2012) also pointed out, online instructors do not transform their pedagogy using the affordances of new technologies. Rather, they integrate technology favouring their established approaches to teaching employed in conventional courses. The mere availability of new technologies in online courses does not necessarily warrant pedagogical development or transformation.

Nevertheless, some researchers insist that online education has radically altered the traditional educational structure. Major's (2010) findings support that stance from a qualitative study. Using a rigorous meta-ethnography approach, the study revealed that online education changed faculty's belief about teaching, instruction, course, and students. Harashim (1995, 1996, 2000) argued that the relationship of the student to the teacher, to other students, and to the content of the curriculum dramatically changes in an online environment. For instance, online, students can avoid the disruption that is

common in face-to-face group discussion. At the same time, online students may have difficulty in bringing out the subtle nuances of a face-to-face conversation.

Online, students may be better able to express their thoughts articulately with the help of text and media, and their communication can be archived and searched whenever the need arises. The archived communication could serve as an opportunity for students to reflect on their learning and help to further study. That record of learning could help or hinder students' retention of content and ideas, discussed in their classes just as some researchers argue that cell phones actually hinder our ability to remember phone numbers. Others believe that, due to technology, the way we perceive and remember that cell phones extend our working memory.

Harashim (2012) characterized this phenomenon as a new paradigm in learning and that we ultimately need a new learning theory aligned with a new type of education (Harashim, 2012). Andrews (2011) also supported the necessity of developing a new theory. He argued, "The difference is sufficiently significant to warrant the beginnings of a new theory of E-learning itself" (p.119).The paradigm shift in the nature of teaching and learning led by Web. 2.0 and other technologies necessitates that instructors adjust to a new environment in terms of both technological tools and pedagogical approaches. Miller (2011) asserts that instructors, with the help of current technical resources, expand students' learning opportunities beyond conventional text and lecture-based classroom.

A social constructivist approach describes learning as the process of knowledge construction through interactions with others (Vygotsky, 1978). Researchers argue that this approach is likely enacted in technology integration in the classroom, and further is

well-matched with online teaching and learning (Clarke & Watts-Taffe, 2013; Churcher, Downs, & Tewksbury, 2014). In other words, certain technologies lend themselves well to such social constructivist approaches (Chandler-Olcott & Lewis, 2010). For instance, Churcher, Down, and Tewksbury (2014) see the potential of social media (e.g., Facebook and Wiki) in relation with a social constructivist pedagogy. Social constructivist pedagogy may play a major role in the adoption of specific technologies (Etmer, 2005). However, there is no empirical evidence supporting the assertion that specific technological components that are associated with the social constructive pedagogy, with the potential of enabling students to learn together, are likely employed in online courses. This study sheds light on that issue.

Literacy Faculty Members' Technology Use

It is useful to examine faculty's use of technology in both conventional and online environment when the demands of technology integration into reading and writing instruction in 21st century is considered, including the practices of new literacies which consist of a unique set of skills, strategies, and dispositions required for reading on the Internet (Leu, Kinzer, Coiro, & Cammack, 2004; Leu & Zawilinski, 2007). Online courses would be an appropriate environment for literacy instructors to use, model, and support the practices of new literacies.

Literacy research has focused on K-12 pre- and in-service teachers of technology use, their perceptions about technology integration, professional development, innovative ways of technology integration, and/or effects of technology enhanced programs in K-12 schools (e.g., Abbott & Faris, 2000; Hansen, 2008; Hutchison & Reinking, 2011;

Hutchison; 2012; McVee, Bailey, Shanahan, 2008; Miller, 2011; Najafi & Clarke, 2008). On the other hand, few studies have addressed the issue of faculty's technology integration into literacy courses (e.g., Boling, 2003).

The number of studies of online literacy courses are rapidly increasing (e.g., Alvermann, Rezak, Mallozzi, Boatright, & Jackson, 2011; Karchmer-Klein & Shinas, 2012; Many, Wallace, Stephenson, & Eickholdt, 2004; Marsh, Lammers, & Alvermann, 2012; Sharma & Pang; 2015; Peterson & Slotta, 2009; Weschke, Barclay, & Vandersall, 2011; Woodcock, 2009). Many studies on online literacy courses made use of many ideas and practices associated with effective use of specific technologies in online environments. The ways in which online literacy faculty support students' learning using specific technologies and how they are dealing with the benefits and challenges that specific technologies provide have many implications for literacy teacher educations. This review presented several examples.

Marsh, Lammers, and Alvermann (2012) explored the use of LMS in online content area literacy courses Traditional aspects of LMS such as reading articles, PowerPointt presentations, and online interactive web sources were used to engage prospective and practicing teachers in further discussion. They concluded that teachers' learning on literacy issues was successfully mediated by the LMS. Peterson and Slotta (2009) used an online discussion forum for promoting discussion on general literacy topics and developing relationships in a graduate online course about literacy theory and practice. The online forum was effective for creating a learning community and more

nuanced and reflective discussion. They suggested that a typical literacy graduate seminar that is highly interactive is well suited to online instruction.

Tracy, Scales, and Luke (2014) investigated what changes in beliefs and perceptions occurred for graduate students participating in an online writing course. An asynchronous discussion forum and a blog were used to encourage students reflect on themselves as teachers of writing and the teaching of writing. They concluded that the online format increased the amount of writing. Woodcock (2009) explored the role of the discussion board in an online course designed for teaching children's literature. The discussion board turned out to be effective in empowering teachers to become more critically literate. Finally, Karchmer-Klein and Shinas (2012) employed Glogster, a tool that allows students to create virtual posters, to support students' learning regarding the demand of 21st century multi-literacy in the context of an online graduate literacy and technology course. Even though the research aimed primarily at examining multimodal texts created in an online course context, they also found that this tool facilitated active learning and collaboration.

Overall, literacy faculty in online courses are making various attempts to improve literacy instruction and students' learning. Their use of technology in online courses seems to be associated with social constructivist approaches such as discussion, active interaction, and/or creating a learning community. This tendency may reflect the reality that literacy instructors are already being guided by social constructivist, student-centred approaches, such as small group discussion or seminar. However, little is known about

the beliefs and instructional viewpoints of literacy faculty who are teaching online courses and the ways they are integrating technology into those courses.

Overall Orientation

Since the end of the 20th century, many believe that our society is changing fundamentally from the Industrial Age to the Informational age, and thus higher education is transforming as well. Barr and Tagg (1995) summarized a paradigm shift in higher education. Perhaps most importantly, from an instructors' stance, this transformation is about a pedagogical shift from an instructional paradigm to a learning paradigm (Fink, 2013). A learning paradigm suggests that knowledge is jointly constructed by students and faculty, rather than delivered or transferred from faculty to students. That paradigm considers students as active constructors of meaning, not as passive vessels to be filled with knowledge (Barr & Tagg, 1995; Fink, 2013). A constructivist or student-centred pedagogy fits this shift in perspective. Thus, this study uses a learning paradigm to refer to how instructors of higher education perceive themselves in terms of employing constructivist and student-centred approaches.

Some researchers and educators believe that many teaching and learning skills developed in a traditional setting can transfer to online courses because the two approaches are more similar than different (Johnson, Aragon, & Shaik, 2000; Kirtman, 2009). They may consider learning experiences that are motivating, student-centred, support student involvement, establish high expectations, and promote connectedness as common key elements that drive effective learning both in the face-to-face and online environments (Clarke & Watts-Taffe, 2013, p.64). Others argue that online education

requires different pedagogical approaches. Specifically, constructivist and student-centered approaches mentioned previously are more natural and better matched to online environments, because instructors are often not physically present (Churcher, Down, & Tewksbury, 2014; Harashim, 2000, 2012).

The Web 2.0 and other technologies included in online courses provide more and improved opportunities for teaching and learning because they have potential to facilitate reflection, collaboration, and knowledge construction (Fahser-Herro & Steinkuehler, 2009; Harashim, 2000, 2012). However, many online instructors may be restricting those opportunities, because their overall pedagogical orientation may not encourage active, student-centered, and constructivist learning approaches (Harashim, 2012; Kim & Bonk, 2006). The present study will explore the relations among faculty's overall orientation, technology use, and online teaching.

Instructor's Role

This study assumes that instructors' pedagogical approaches are enacted in the role they assume. Further, some scholars believe that an instructor's role changes substantively in an online environment with a constructivist approach (Major, 2010). For example, instructors' power and authority may shift more to students, if online they assume the role of a facilitator, a challenger, and an affirmer rather than as an expert or an authority in the discipline (Edwards, Perry, & Janzen, 2011; Jacobs, 2013). Such a shift, if it occurs, requires considerable adjustments in making pedagogical decisions, including the design of learning activities, assignments, and assessments (Fink, 2013). Thus, those adjustments could be a challenge to online instructors (Smith, 2005). However, there is

lack of evidence to support that shift with which online instructors are more of a facilitator and less of a lecturer. This study will shed light on that issue.

What Are the Perceived Advantages and Obstacles to Developing and Teaching Online Literacy Courses?

This section reviews the literature that explores faculty members' perceived advantages of online teaching and the perceived obstacles to developing and teaching online courses, generally in higher education and particularly in literacy teacher education.

Perceived Advantages of Online Offerings

The review of the literature reveals diverse perceived advantages of offering online courses. For example, online courses can enhance an institution's financial position and stabilize budgets with the increased access to more courses by more students (Li & Akins, 2005). Online courses, which provide flexibility and convenience, are attracting students who seek an alternative that fits their busy schedules. Beyond its potential financial benefits to an institution, online education enhances access to marginalized populations such as those with disabilities. From the standpoint of students, taking regular courses in a traditional school may require substantial financial resources, time, and effort. For many traditional teacher education programs, facing declining enrollments, offering courses online is sometimes deemed a survival strategy (Turbill, 2001; 2002).

Online courses also provide other opportunities for enhancing teaching and learning in higher education. Research suggests that there may be distinct pedagogical

advantages associated with online teaching (Li & Akins, 2005). Specifically, online instructors are exposed to new technologies that expand pedagogical options for teaching (Levin, Levin, & Waddoups, 1999). They have ample opportunities to engage in and prepare students for using digital media. They provide opportunities to use social media and online resources familiar to their students.

One of the important perceived pedagogical advantages is that online teaching and learning can improve interaction between students and between students and their instructors. Students typically have greater opportunities in online environment to interact with their instructors and peers than in the traditional format (Palloff & Pratt, 1999; Schrum & Berge, 1997). Online environments may enhance students' engagement and involvement with the increased accessibility to all students thinking about the topic and the greater opportunity for participation (Peterson & Slotta, 2009).

Some researchers note that online environments enhance students' engagement and involvement (Tallent-Runnels et al, 2006). Many also claim that online environment provide greater breadth and depth of learning (Althaus, 1997; Davidson-Shivers, Tanner, & Muilenburg, 2000; Keef, 2003). They reason that students in online courses have an increased accessibility to a wide variety of learning opportunities and resources. Online, students have more access to all other students' ideas and perspectives about a topic of interest (Peterson & Slotta, 2009). Further, self-pacing is a perceived benefit of online learning, enabling students to have more time for reflection and an opportunity to broaden and deepen learning. However, results from research on the quality of student learning are often inconsistent and even contradictory (Peterson & Slotta, 2009). And,

other researchers indicate that learning in an online environment may become poorer or more insufficient than in the face-to-face environment (Kanuka & Anderson, 1998; Thomas, 2002).

Yet, some perceived advantages may not be a direct product of an online format (Wright & Street, 2007), but simply that they are more natural to online environments. For example, if discussion is carefully designed in conventional courses, it might produce results equivalent to online discussion. In either case, critical reflection and strategic action is needed for educators to capitalize on the advantages of online education in their teaching practices (Baran, Correia, & Thompson, 2011).

Perceived Advantages of Online Literacy Courses

With respect to literacy courses, online teaching and learning provide some unique affordances. A social constructivist approach in a conventional classroom has proved to be widely used and influential in literacy teacher education (Kosnik, Rowsell, Williamson, & Simon, 2013). Researchers argue that the online environment facilitates a constructivist approach. Accordingly, online courses have potential to promote a constructivist approach in literacy teacher education. For instance, online discussion has been effectively used to build collaborative knowledge and share multiple experiences for both prospective and practicing literacy teachers (Marsh, Lammers, & Alvermann, 2012; Pedro, Abodeeb-Gentile, & Courtney, 2012).

Another potential advantage pertinent to literacy courses relates to diversity. Diversity has been considered an important goal of literacy teacher education as is

reflected in the International Literacy Association (ILA) standards for reading professionals (ILA, 2010):

> Candidates recognize, understand, and value the forms of diversity that exist in society and their importance in learning to read and write… use a literacy curriculum and engage in instructional practices that positively impact students' knowledge, beliefs, and engagement with the features of diversity. (IRA, 2010, pp. 24, 26)

Rogers, Marshall, and Tyson (2006) argued that "immersing students in community based environments and providing spaces for dialogue" are promising strategies for teachers to become "flexible cultural practitioners in diverse settings." (p.202) Online courses have been argued to have a great potential to increase diversity since they can have local, national and even international students and they often create strong learning communities (Clarke & Watts-Taffe, 2013).

More importantly, literacy teachers, more than other teachers, are strongly urged to reflect on what it means to be a literacy teacher, as the very nature of what it means to be literate is rapidly changing (Coiro, 2003). Today, literacy teachers must expand their expertise in new literacy skills, strategies, and dispositions that the new technologies require (e.g., Chats, Blogs, Discussion Boards, and Podcasts). In that regard, online course can be an effective approach to literacy teacher education in the age of new literacies. Watts-Taffe and Gwinn (2007) argued,

> Given the constantly evolving nature of technology, interactive communication among pre-service teachers and in-service teachers, professional development

> facilitators, and teacher educators is critical to providing meaningful technology-related experiences for all children. Traditionally, these communities have worked in isolation, like individuals on independent paths. As we move into the digital age, there is a compelling need for these communities to come together and create shared responsibility for and ownership of literacy instruction. (p. 5)

Another potential advantage of online courses is that they may expose literacy teachers to opportunities that meaningfully engage them in interactive communication characteristic of a new literacies perspective (Leu, Kinzer, Coiro, & Cammack, 2004; Leu & Zawilinski , 2007).

In summary, online courses have many perceived or possible advantages, which taken together provide a reasonable rationale for literacy faculty members to be interested in online courses. Some of these advantages are general and some are specific to the field of literacy. For example, specific to the field of literacy, online education facilitates sociocultural or constructivist practices, increases diversity, and gives opportunities to appropriate new technologies in ways to bring in meaningful and new literacy instruction for all students.

Perceived Obstacles to Offering and Teaching Online Courses

Along with advantages, researchers in higher education have identified challenges and obstacles faculty members are faced with when they try to develop and teach online courses.

Obstacles identified include: (a) cost and resources (Berge, 1998; Levy, 2003; Rockwell, Schauer, Fritz, & Marx, 2000), (b) availability of high quality accessible online materials

and resources (Anderson, 2004), (c) student technological skills (Levy, 2003; Muilenburg & Berge, 2001), (d) faculty technology skills (Bachner, 2014; Muilenburg & Berge, 2001; Tallent-Runnels et al, 2005), (e) faculty biases against online teaching (Berge, 1998, Harashim, 1995), (f) reliability of technology (Butler & Sellbom, 2002), (g) time and resources for development (Berge, 1998; Smith, Passmore, & Faught, 2009; Rockwell, Schauer, Fritz, & Marx, 1999), (h) technical support (Berge, 1998), (i) training of faculty (Harashim, 1995, Rockwell, Schauer, Fritz, & Marx, 1999), and (j) copyright issues (Muilenburg & Berg, 2001). These obstacles are not mutually exclusive. For instance, online instructors could be challenged simultaneously with spending more money and time to seek high quality online materials with their limited technology skills.

Perceived Obstacles to Offering and Teaching Online Literacy Courses

No studies have specifically examined obstacles in online courses that are unique and pertinent to literacy educators. However, it is possible to speculate about possible obstacles from descriptions in previous studies about online literacy courses. Turbill (2002) conducted an action research study while teaching an online course in teaching reading in which she defined her role as a facilitator. Although the course was well designed based on a theoretical framework for teacher learning and successfully transported into the online format, she faced some challenges. For instance, she was urged to reexamine her roles in maintaining interaction with students through technology mediated communication and change the way in which she assessed students' learning, because it was demonstrated mainly by written discourse through interaction on a listserv. She concluded that online courses particularly increase the quality of teaching and

learning. Yet, those adjustments were challenging, even though she considered herself familiar with the role of facilitator that such online environments may require.

Karchmer-Klein and Shinas (2012) offered another example of how learning outcomes derived from technology use in online environments are often at odds with conventional modes of evaluation. In their online course teaching multimodality, the authors required students to create multimodal texts. Noticing that other people's thoughts and ideas were included in students' multimodal texts, when no constraints were put on how resources should be integrated into the work, the authors' traditional notion that assignments should be the work of the individual authors was challenged. As the notion of reading and writing has changed in a multimodal environment (Leu, Kinzer, Coiro, & Cammack, 2004), online literacy faculty are challenged to adjust their evaluation methods to fit with the different literacy outcomes that online teaching and learning require.

Marsh, Lammer, and Alvermann (2012) designed a content literacy course in an online format. One challenge they faced was students' differences in attitudes toward online courses. They found that some students were in favor of online discussion; others were not. Thus, those differences create a significant challenge for literacy faculty to modify the technologies they use based on student characteristics and preferences. Students enrolled in an online course may vary in background and learning experience. Particularly, online students have different preferences for multiple technologies, and their preferences are often contradictory. For example, a survey found that, when asked if they have a preference for course materials, 43% of online students preferred digital

textbooks, whereas 33% preferred paper textbook, and 23% did not have a specific preference (Clinefelter & Aslanian, 2015). Dispositions toward various technologies used in online education may be an important factor in determining a student's success.

To What Extent Are Literacy Faculty's Attitudes toward Online Courses Favorable?

Research suggests that there has been continued skepticism among faculty members toward online education despite all its variations. For example, Gallup (2013) indicated that there is skepticism about the quality of online education among faculty members. In their survey, only one fifth of faculty members reported that they believe online courses to be as good as conventional courses in terms of learning quality. Negative attitudes are reported particularly in relation to the value of Massive Open Online Courses (MOOCs). The proportion of academic administrators who report that their faculty members value online instruction remains low with values between 27.6% and 33.5% for more than a decade (Allen & Seaman, 2015).

However, instructors who have online teaching experience are more favorable than those who have no experience. Faculty members' attitudes about the quality of online education are somewhat at odds with administrators being relatively positive about the learning outcomes of online courses (Allen & Seaman, 2014). Literacy faculty members' attitude toward online courses may be a part of this trend. However, little is known about the extent to which literacy faculty's attitudes toward offering online courses are favorable or unfavorable and what factors may account for differences in their attitudes.

Chapter Summary

In this chapter, I reviewed the literature related to the questions guiding the present study. The literature review provided a rationale to conduct a national survey of literacy faculty to understand how online literacy courses are being offered, the opportunities and challenges faced by online literacy faculty, as well as their beliefs and attitudes toward offering and teaching such courses. In the next chapter, I report the research methods and design of this study.

CHAPTER THREE

METHOD

This study employs survey methodology, which has been recognized as relevant to addressing many issues related to literacy practices (Bauman & Bason, 2011). One recent example would be Hutchison and Reinking (2011)'s national survey, which investigated the extent to which Information Communication Technologies (ICTs) have been integrated into K-12 literacy instruction and teachers' perceptions about doing so. The present survey is designed to gather descriptive data characterizing the circumstances and extent of online courses taught by literacy faculty in education programs; the influences that might be related to, and thus to explain, variations in use; and beliefs and attitudes about offering and teaching online literacy courses.

The survey was administered online, because it enables broad distribution to a large sample of faculty teaching literacy courses through their e-mails. The population of interest, in this case, mitigates a concern about accessibility to the Internet in distributing surveys online because virtually all universities and colleges assign faculty e-mail addresses and faculty are expected to check emails routinely, thus addressing the issue of coverage error, which occurs when a sample does not completely represent the population of interest (Sue & Ritter, 2012).

Participants and Demographic Data

The population of the study is tenured and tenure-track faculty, as well as instructors, lecturers, and adjunct faculty (excluding doctoral teaching assistants) at four-

year institutions of higher education who teach courses in literacy education at the undergraduate and/or graduate level. A course in literacy education is defined as one that is offered in a program, department, school, or college of education that focuses on understanding literacy in relation to how it might be developed in an educational or related context. However, the boundary between disciplines and teaching responsibilities may be blurred and the term literacy has many meanings (Barton, 2007). For this purpose, one item was included in the beginning of the survey to ask whether respondents consider their position or faculty role to be identified mainly with literacy education. If not, they were immediately directed to the end of the survey. All the participants were also asked to report the extent to which they teach courses aimed specifically at literacy instruction (e.g., includes topics such as teaching methods, strategies, assessments, materials, etc.). Figure 3.1 summarizes the results. Most of the participants (about 90%) in this study reported that they teach all of, or many of their courses aimed at literacy instruction.

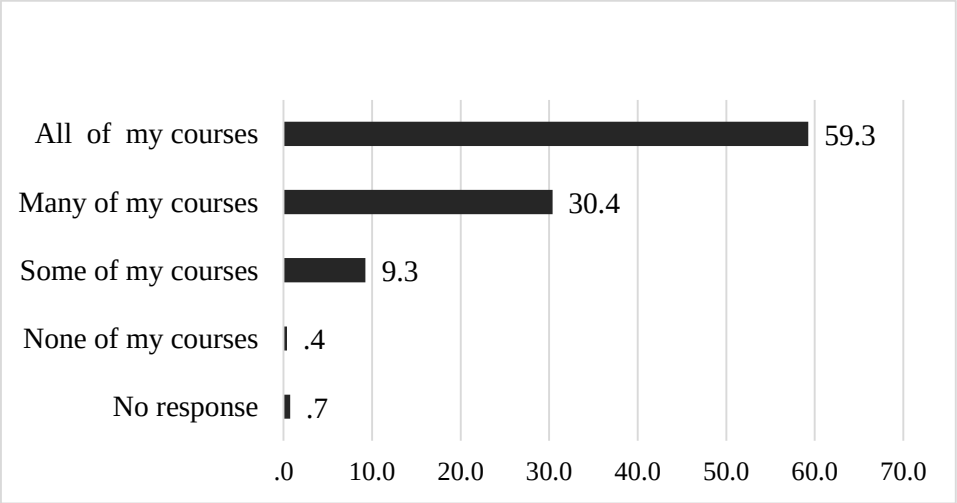


Figure 3.1. Extent of teaching courses aimed at literacy instruction.

Respondents' gender, age, teaching years in higher education, academic rank, teaching level, and institutional categories are also summarized in Table 3.1

Table 3.1

Profile of Participants

Demographics	Number of respondents	Percentage of respondents
Gender		
Female	217	81.0
Male	51	19.0
Age		
30s	39	14.6
40s	69	25.8
50s	72	27.0
60s	76	28.5
70s+	11	4.1
Teaching years		
0-5	47	17.5
6-10	59	21.9
11-15	51	19.0
16-20	35	13.0
21 or more	77	28.6
Academic rank		
Distinguished	11	4.1

Full	61	22.8
Associated	96	36.0
Assistant	73	27.3
Lecturer/Instructor	16	6.0
Adjunct	8	3.0
Other	2	0.7
Teaching level		
All graduate	71	26.4
Mostly graduate	112	41.6
Mostly undergraduate	72	26.8
All undergraduate	14	5.2
Institution categories		
Very high research	60	22.3
High research	88	32.7
Low research	68	25.3
Masters only	48	17.8
Undergraduate only	4	1.5
Others	1	0.4

There were many more responses from female faculty members (81%) than male (19%). According to the NCES's digest of education statistics, in 2003, females comprised 74.1 % of the faculty members in teacher education

(https://nces.ed.gov/programs/digest). The number of female faculty in teacher education had soared from about 13,000 in 1998 to 29,000 in 2003. There are no NCES data available showing the percentage of faculty by gender and program area after 2003. It is reasonable to expect that the percentage of female faculty continued to increase. Thus, the gender profile of this sample is arguably an adequate representation of current faculty in literacy education.

In terms of age, the profile of the survey participants is relatively consistent with the profiles of previous surveys of faculty in higher education, which have been rigorously conducted at the nation level. For instance, the age profile of a Gallup (2013) sample is closely paralleled with the profile of this study as follows (Gallup's percentages are presented in parentheses): 20s = 0% (2%); 30s = 14.6% (16%); 40s = 25.8% (23%); 50s = 27.0% (30%); 60s = 28.5% (24%); 70s+ = 4.1% (5%). The comparison of teaching years with the profile of Allen, Seaman, Lederman and Jaschik's (2012) sample suggests that there are possibly somewhat more responses in 0-10 years and less responses in 21 or more years (Allen et al. percentages are presented in parentheses); Teaching years of 0-10 = 39.4 % (27.5%); 11-20 = 32.0% (35.0%); 21 or more = 28.6% (37.5%).

When compared to other profiles of general faculty in higher education, there is a somewhat discrepancy in relation to academic rank. The comparison of academic rank with the profile of the NCES's digest of education statistics (2011) reveals that lecturers, instructors and others might be underrepresented in the sample even though this profile is not pertinent to literacy faculty (NCES's percentages are presented in parentheses): Full professor = 26.9% (23.8%); Associate professor = 36.0% (20.4%); Assistant professor =

27.3% (22.9%); Instructors and lecturers = 6.0 % (18.8 %); Adjunct and others = 3.7 % (14.1%). That discrepancy may be likely explained by the sampling method detailed in the next section (i.e., Instructors, lecturers, adjunct and others are not likely to be present at the school websites).

Likewise, the profile of the participants shows that there is another possibility that literacy faculty members who are working at an institution that awards only undergraduate degrees were underrepresented in this survey (1.5%). According to the NCES's digest of education statistics (2012-2013), "undergraduate only" institutions comprised 43.4 % of four-year institutions ("very high research" = 6.4%; "high research" = 6.0%; "masters only" = 38.9%). One possible explanation for such underrepresentation is that teacher education programs including literacy are not likely offered by smaller institutions that award only undergraduate degrees.

Development and Validation of the Survey

A survey instrument was developed to investigate literacy faculty's practices, perceptions and attitudes toward online courses following the guidelines for designing a good survey as recommended in the literature (Devellis, 2012; Dillman, Smith, & Christian, 2014; Rea & Parker, 2012; Sue & Litter, 2012). A literature review, which is summarized in the previous chapter, was conducted to identify key issues, concerns, and concepts in relation to philosophical, pedagogical, and methodological shifts associated with online teaching and learning. From the literature review, a series of research questions were formulated.

The research questions for this study were as follows:

1. To what extent literacy courses are being offered online, who is offering such courses, and under what circumstances?
2. What technological components and pedagogical approaches are being employed?
3. What are the perceived advantages of online literacy courses, and challenges to implementing them?
4. To what extent literacy faculty's attitudes are favorable or unfavorable toward offering them?
5. What factors account for differences in use of, beliefs of, and attitudes about online literacy courses?

Informed by the literature, I selected a set of variables to address the research questions and created items on the survey that reflected those variables and that used, a variety of response choices: Likert scales (e.g., strongly agree to strongly disagree), checklists, yes/no, and open-ended responses. The variables of interest and the corresponding items developed are summarized in Table 3.2.

Table 3.2

Survey Items

Variables of interest	Representative item	Response format
Extent of teaching online literacy courses	How often have you taught, or do you teach, ONLINE literacy courses (courses designed to be offered almost exclusively online)?	Multiple choice (1)*

Extent of using technical components	In general, how often do you employ the following online tools or activities in your courses? - Real time discussion (etc.)	Likert scale (12)
Pedagogical orientation	My overall orientation to teaching literacy courses is... - Traditional (e.g., lecture/ required text and readings/ objective exams)	Likert scale with open-ended (1)
Instructor's role	To what extent do each of the following capture how you perceive your role as an instructor: - Knowledgeable expert (etc.)	Likert scale with open-ended (13)
Perceived suitability of course components	Rate each of the following course components or activities in terms of how well-matched they are for teaching literacy courses online. - Modeling or demonstrating good instruction (etc.)	Likert scale with open-ended (8)
Perceived advantages	Each of the following is a possible reason for offering online literacy courses. Indicate the degree to which you believe each reason is justifiable.	Likert scale with open-ended (10)

	- Increased access to more courses by more students (etc,)	
Perceived Obstacles	Indicate the extent to which you believe each of the following is a barrier, obstacle, or challenge to teaching literacy courses online. - Cost and resources (etc.)	Likert scale (10)
Attitude 1	When compared to teaching conventional courses, online courses are in general, - Much less desirable	Multiple choice (1)
Attitude 2	Please rate your agreement with the following statements. - Online courses are a welcome expansion of the options for teaching literacy courses (etc.)	Likert scale (6)
Demographics	How many years have you been in higher education?	Yes/no, Multiple choice (7)
Academic unit characteristics	To what extent does your ACADEMIC UNIT provide guidance and direction for developing, offering, and teaching online courses?	Multiple choice (3)

Institutional characteristics	How prevalent are online courses at your INSTITUTION as a whole?	Yes/no, Multiple choice, Checklist (click all that apply), Open-ended (6)

*Note: Values in parentheses are the total number of items used for measuring each variable.

Expert Review

Four experts respectively in the field of literacy, technology, online teaching and learning, and scale development were recruited from among the researcher's dissertation committee members and acquaintances. I asked them to critically review how well each item reflected the variable being explored and whether each item would be clear and understandable to the target population. Based on their feedback, the initial items were revised accordingly. For instance, one item asking respondents to identify significant differences between conventional and online courses was removed because the experts considered the item to be ambiguous and open to various interpretations. Another item (greater interaction among students and between students to instructor) was identified as a two-edged question (Dillman, Smith, & Christian, 2014) and thus was revised and separated into two parts: "greater interaction among students" and "greater interaction between students and instructor" These revisions were representative of revisions made throughout the survey based upon the experts' feedback.

Pilot Study

After the expert review, the survey was converted to an online format using Qualtrics (www.qualtrics.com), an online survey application. This step followed the guidelines for developing online questionnaires recommended in the literature (Dillman, Smith, & Christian, 2014; Sue & Litter, 2012). In particular, the guidelines such as "deciding how many questions will be presented in each page and how questions will be arranged" (Sue & Ritter, 2012, p. 90) and "putting a progress bar and navigation aids" (Sue & Ritter, 2012, p. 93) were reflected in the survey design.

The online version of the survey was piloted with a convenience sample of 54 literacy faculty members, similar to the population of literacy faculty at four-year institutes of higher education. The survey was distributed to them from April 16, 2015 until May 5, 2015. A total of 30 participants completed the survey, resulting in a 55.6% response rate. Specifically, the pilot participants were asked to respond to two yes/no questions to each item while taking the whole survey independently: a) "Was the item understandable?" and b) "Was the scale appropriate?" They were asked to respond to an open-ended question to explain the reason when they selected "No." They were also asked to identify additional variables that might inform, or better inform, the research questions. Their responses to the pilot survey were used only to further refine the survey and were not included in the final analysis and interpretations reported in this dissertation.

Item analyses were conducted to see if there were any revisions needed of the survey items. For instance, one item asked respondents about their overall orientations to

teaching literacy courses, in which none of the participants responded to the option of "traditional" and only two participants responded to the option of "somewhat traditional." However, I interpreted that this was due to the small sample size, and there was nothing inherently problematic with the item itself. Reliability tests (Cronbach's α) were conducted to determine internal consistency for the variables that have a set of items to measure their characteristics: a) perceived suitability of course components, b) perceived advantages, c) perceived obstacles, and d) attitude. Cronbach's α computed with the pilot responses ranged from 0.71 to 0.81, indicating that all the items related to the variables could be retained. Except for correcting a typographical error, no items were removed or revised based on feedback from the pilot survey.

Final Survey

Except for correcting a typo, no items were removed or revised based on feedback from the pilot survey. The final survey included 85 items in the following formats: a checklist, three yes/no responses, nine multiple choice, and 72 items using a Likert scale. See appendix A for the final set of items, and the final survey can be accessed at the following site:

https://clemsonhealth.az1.qualtrics.com/SE/?SID=SV_cIln2Rycnp5Zxsh

Disseminating the Survey and Soliciting Participation

With an assumption that a sample should be representative of the population, a probability sampling procedure was adopted to make generalizations about the entire population. This study employs cluster sampling, one of several probability sampling methods, which is a useful approach when a population is large and where it is difficult to

identify all individuals in the population (Sue & Ritter, 2012). In cluster sampling, clusters are randomly selected and then each individual in the selected cluster is invited to participate in the survey. This approach is appropriate in this instance because the population is relatively large, and a cluster can be easily identified as faculty at an institution. Institutions were randomly selected from a sample of institutions obtained using methods described here subsequently, and all of the literacy faculty at each selected institutions were recruited as the initial sample of potential respondents.

That process began by generating a list of four-year institutions in higher education that offer literacy programs. The list was generated by consulting the membership rolls of three national literacy organizations: the Literacy Research Association (LRA), the International Literacy Association (ILA), and the Association of Literacy Educators and Researchers (ALER). These organizations attract members in the population of interest and the membership rolls provide members' professional affiliations, many of which are colleges and universities. Because these are national organizations, their members and institutions represent all geographic regions of the U.S. Although the membership of the LRA and ALER is skewed toward more research-oriented institutions, the ILA members are more likely to represent a full range of institutions in terms of size and mission. Likewise, ALER members are more likely to have positions at small to mid-sized institutions.

The initial sampling framework consisted of 437 institutions found from the three membership directories: LRA (303), ILA (164), and ALER (121). Many institutions overlapped among these organizations. The institutional information was entered on an

Excel spreadsheet. Using a random-number generator and sorting function in Excel, the list of institutions was easily sorted into a random order. The literacy faculty at the randomly selected institutions were identified by searching their institutional websites. Further, their emails for survey distribution were located at the websites. These faculty members consisted of the sample of the study. The random sampling continued until the number of the requisite respondents was achieved.

The requisite number of the respondents was determined by taking four conditions into account: a) population size, b) response distribution, c) confidence level, and d) margin of error (Dillman, Smyth, & Christian, 2014; Sue & Ritter, 2012). The required size for a sample does not increase much for populations approximately more than 20,000 (see Dillman, Smyth, & Christian, 2014, p 57, Figure 3.1). For instance, the required sample size for the population of 20,000 is 377 at ± 5% margin of error, but 384 at the same conditions is required even for the population of 1,000,000,000. Thus, if the number of population is unknown, but relatively large, it is the most conservative strategy to assume it is 20,000 to insure an adequate sample (Dillman, Smyth, & Christian, 2014).

Response distribution is a percentage of the sample that selects a particular response. Suppose a survey has a yes/no question, the response distribution for the yes/no item would vary from sample to sample. If the estimate of the response distribution for the yes/no question is 40/60 split, one needs a larger sample than the expected 20/80 split because the likelihood of error increases. Given that it was difficult to estimate the variation of the participants' responses to each question, the response distribution was set

at 50/50 split to yield the largest sample size. A 95% confidence level was used because it is the most common one when there is no relevant concern to be more or less accurate.

The required sample size greatly changes according to margin of error, which is the amount of error a researcher finds acceptable. For instance, the required size is 1014 at ± 3% margin of error while 377 is required at ± 5% with the same conditions (Dillman, Smyth, & Christian, 2014, p.57). For this study, the requisite number of 377 respondents was initially calculated by a formula in the literature at ± 5% margin of error and 95% confidence level (Dillman, Smyth, Christian, 2014, p.56).

A further consideration was the requisite sample size for the expected analyses, which required a multiple regression analysis that is detailed in the subsequent section. Researchers recommend at least 200 responses (up to 20 predictors) or 10 cases for each predictor as a general rule (Field, 2009, pp. 222-223). Thus, the initial target of more than 377 respondents was considered unproblematic with a multiple regression analysis. The survey was delivered to the randomly selected sample through an email invitation containing a link to the survey. The email sent is included in Appendix B. After 7 days, a follow-up email was sent to those who have not completed the survey to increase the response rate.

To attain the sample target of 377, while expecting a 25% to 30% response rate, the survey was distributed to 1500 faculty members from May 13, 2015 until June 5, 2015. A total of 297 faculty members completed the survey, resulting in a 19.8% response rate. However, 25 responses were excluded from faculty members who did not consider themselves literacy faculty and two incomplete responses (less than 85%) were

excluded for further analyses, resulting in a total of 270 useable responses. Thus, this survey had less accuracy than the target: at ±5.92% margin of error and 90.2% confidence level (Dillman, Smyth, & Christian, 2014). However, this accuracy estimation may be deflated because the most conservative assumption was made with the number of population (20,000) and the response distribution (50/50 split). Further, the sample size of 270 is of no concern for a multiple regression analysis with less than 27 predictors (Field, 2009, pp. 222-223).

Data Analysis

Data were analyzed using the data analysis software SPSS version 22.0 (IBM Corp, 2013). The analyses of data included descriptive statistics, correlations, and multiple regression analyses. Descriptive statistics in the study aimed to explore various characteristics of the sample and, with the benefit of the random sampling method, were also able to generalize those characteristics to the entire population. Frequency distributions and summary statistics such as means were used to describe variables associated with each research question. For instance, the extent of teaching online literacy courses was characterized by the frequency distribution, and was also counted as a characteristic of the entire population, literacy faculty in this study.

Correlations were aimed at establishing the relationships between or among variables related to the research questions. Mostly, Spearman's rho, a non-parametric statistic, was used because most variables of interest in the study were measured as an ordinal scale or violated parametric assumptions such as a normal distribution. For example, Spearman's rho between the extent of teaching online literacy courses and the

use of technological components were calculated to understand if specific tools or technologies were preferred in an online environment by literacy faculty. Specifically, correlational analyses were a viable option when exploring a relation between a variable of interest and demographic variables such as age, gender, and teaching experience which cannot be manipulated (Cunningham, Stanovich, & Maul, 2011).

Multiple regression analyses were aimed to investigate several influences predicting higher levels of teaching online literacy courses and positive attitude toward online courses Some predictors, such as technological skill, technology use, perceived advantages, and perceived obstacles, were first selected and tested in a regression model because they were supported by an established theoretical literature (Field, 2009). When predicting the extent of teaching online literacy courses, attitude was also entered into the model and tested as an important predictor and vice versa. Others such as academic rank, teaching years, teaching level, mandate, and prevalence of online courses were also used as predictors based on significant correlations (Field, 2009). The odds ratio for greater or lesser extent of teaching online courses and the total amount of variance in attitudes explained by all predictors in the model was examined as well as model fit. When predicting literacy faculty's attitudes toward online courses, the unique variance each predictor explained was also examined (Cunningham, Stanovich, & Maul, 2011).

Chapter Summary

In this chapter, how the survey method was used for this study was detailed. A profile of the sample was described to see if the sample well represented the population of literacy faculty. The details of sampling method, survey development, and survey

dissemination were presented and the outline for data analyses was also provided. In the next chapter, the results from data analysis were presented in response to the research questions that this study addressed.

CHAPTER FOUR

RESULTS

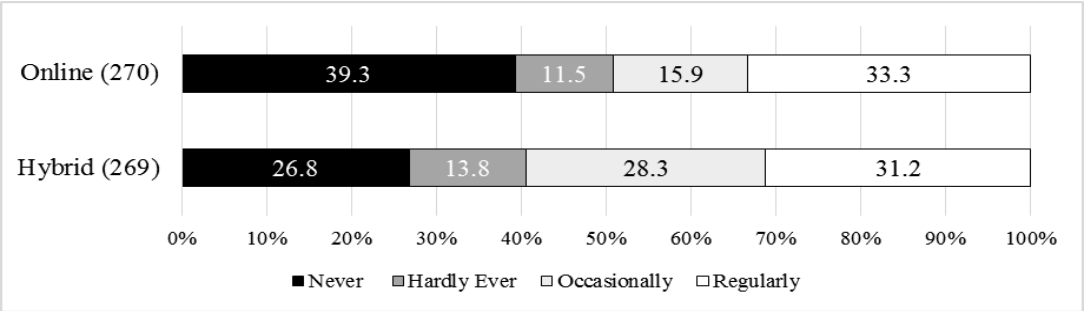
This chapter reports the results of data analyses in response to the research questions the present study addressed. The results included how responses were reorganized and recoded when needs arose for descriptive analysis, test statistics, correlation, and multiple regression analyses whose aims were detailed in Chapter 3. The results also include summaries of responses to open-ended questions in the survey.

To What Extent Are Literacy Courses Being Offered Online?

This research question aimed to investigate to what extent literacy faculty were teaching online courses in higher education.

Extent of Teaching Online Literacy Courses

For the purpose of this study, the extent of literacy courses offered online is defined as instructors' level of involvement in those courses. Participants were asked to indicate the extent of literacy courses they have taught or teach in an online format, and a hybrid format as well to further examine if there was a difference in the extent of involvement between the two formats. Hybrid courses were defined as courses designed to blend elements of online courses and elements of conventional courses taught in a classroom. These two variables (the extent of teaching online and hybrid literacy courses) included four levels: never, hardly ever, occasionally, and regularly. Figure 4.1 summarizes the percentage frequency distributions with which participants reported having taught or teaching online and hybrid literacy courses at each level.



Note. Values in parentheses are the number of responses in that category hereafter.

Figure 4.1. Extent of teaching online and hybrid literacy courses.

Figure 4.1 shows that approximately one third of the respondents reported that they have taught or teach online literacy courses regularly, whereas nearly 40% reported never teaching online courses. A relatively small group of the respondents fell into the middle levels of hardly ever (11.5%) and occasionally (15.9%) respectively. Respondents were more actively involved in teaching hybrid courses than fully online courses. Nearly 60% of the participants reported they have taught or teach hybrid literacy courses on a regular or occasional basis. Those who reported never teaching hybrid courses was 12.5 percent point less than fully online courses, whereas they were teaching hybrid courses the similar percent point (12.4) more than fully online courses on an occasional basis. Additionally, participants in this study were asked to report their perception about the extent to which literacy courses were offered online in their academic units. Figure 4.2 summarizes the results.

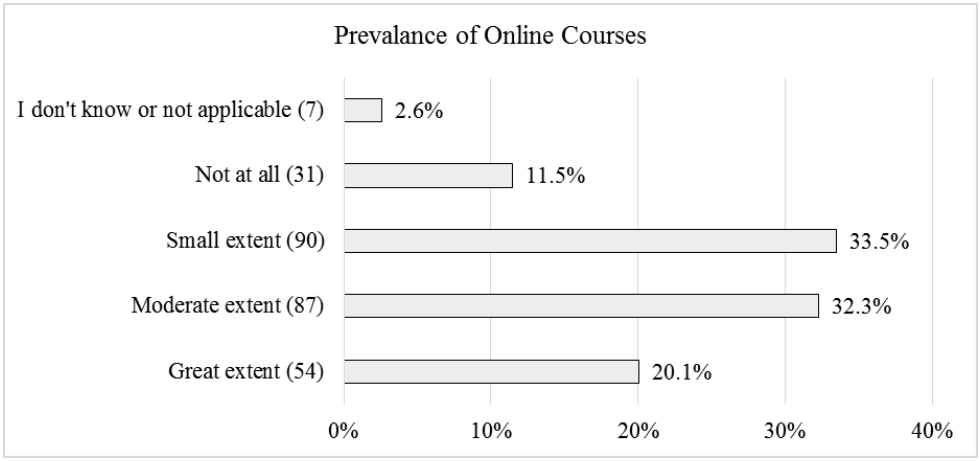


Figure 4.2. Respondents' perception about prevalence of online literacy courses in their academic units.

Figure 4.2 shows that online literacy courses were relatively prevalent in their academic units with all but 14.1% reporting some online literacy courses. More than half of the respondents reported that literacy courses were offered online to a great extent or a moderate extent in their academic units.

Who Is Offering Online Literacy Courses and Under What Circumstances?

This research question aimed to investigate how literacy faculty's individual characteristics and their circumstances would be associated with the extent of their online teaching.

Extent of Teaching Online Literacy Courses by Individual Characteristics

Figure 4.3 summarizes the percentage frequency distributions with which respondents reported teaching online literacy courses at four different levels by those individual characteristics. Nearly half of literacy faculty with greater technology skill reported teaching online literacy courses on a regular basis, whereas 70.4 % of literacy

faculty with minimal technological skill, 53.8% at the rank of the lecturer, adjunct, or others, and 51.1% with less than 5 years teaching reported never teaching online courses.

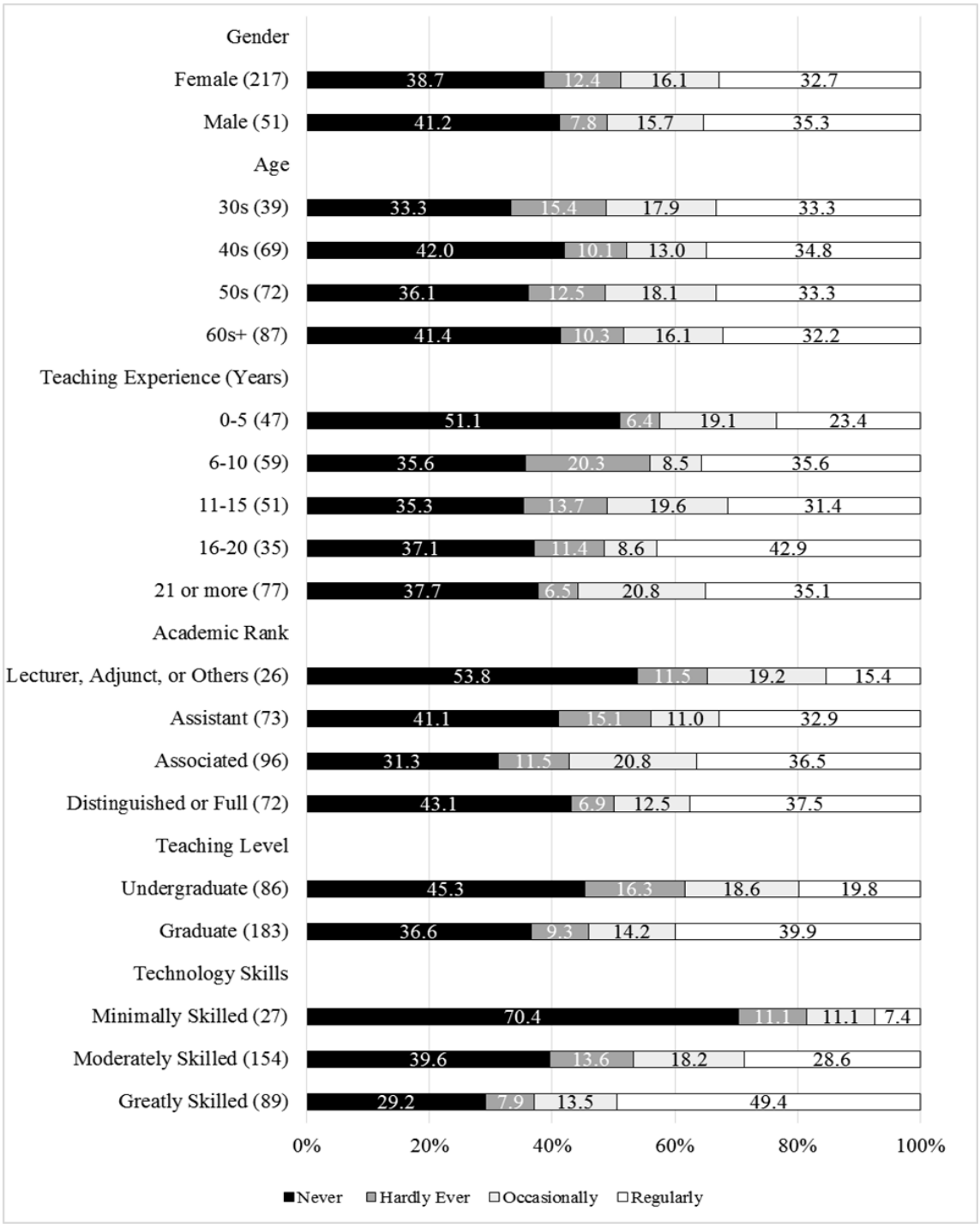


Figure 4.3. Extent of teaching online literacy courses by individual characteristics.

Given that the extent of online teaching was measured on an ordinal scale (never, hardly ever, occasionally, and regularly), nonparametric tests (the Mann-Whitney test and the Kruskal-Wallis H test), which allow comparison of different conditions such as faculty's individual characteristics and their circumstances, were conducted. Both tests depend on the procedure of ranking the scores on the variable: that is finding the lowest score and giving a rank of 1, then finding the next lowest score and giving it a rank of 2 and so on, resulting in high scores represented by high (great, large) ranks and low scores represented by low (small) ranks. Once all scores were converted to ranks, then the test analysis is conducted on the ranks rather than the actual scores (Field, 2009, p. 540).

For example, as for the extent of online teaching (never = 0, hardly ever = 1, occasionally = 2, and regularly = 3), the lowest score is 0. However, in this case, there might be many same scores, called tied ranks, because the scale includes only four levels. Suppose there are 40 responses with the same lowest score of 0 (never), then all of them were given the average of these 40 ranks, (1+2+3+···+38+39+40) / 40 = 20.5 rather than 1. If there are 25 responses with the next lowest score of 1 (hardly ever), likewise, all of them were given the average of those 30 ranks, (41+42+43+···+68+69+70) / 25 = 55.5 rather than 41, and so on. For comparison, the ranks are disaggregated by conditions, then the ranks in each condition are summed up and averaged, resulting in a mean rank in each condition.

The Mann-Whitney test and the Kruskal-Wallis H test compare the mean ranks in general. We may expect the similar mean ranks for the conditions if there is no difference between the conditions with regard to the extent of the variable we are interested in.

Thus, a higher mean rank (e.g., the mean rank, 135.16 for the male faculty is higher than 134.35 for the female faculty in the next section) is associated with having more high, great, large scores on average. The results from those nonparametric tests in response to their individual characteristics are detailed in the next section.

Gender

To test if the extent of teaching online literacy courses by gender were statistically identical or different, a Mann-Whitney test that allows two unpaired conditions to be compared, was conducted. The Mann-Whitney test indicated that the extent of teaching online literacy courses was not significantly different between female faculty and male counterpart at .05 level, U (268) = 5500.00, p = .94, with a mean rank of 134.35 for female faculty and a mean rank of 135.16 for male faculty.

Age

Age, another individual characteristic, was originally classified into five categories: 30s, 40s, 50s, 60s, and 70s+. Responses in the 70s+ category were aggregated into the 60s category because the total responses in that category (n=11) were relatively small to be fully qualified for detailed analyses and further interpretation as an individual group. The responses were then disaggregated into four age groups, a Kruskal-Wallis H test was used to see if the extent of teaching online literacy courses were statistically different by age groups. The Kruskal-Wallis H test indicated that the extent of teaching online literacy courses was not significantly different among different age groups at .05 level, $\chi 2$ (3, 267) = 0.41, p = .94, with a mean rank of 138.47 for 30s, 132.28 for 40s, 136.64 for 50s, and 131.17 for 60s+.

Teaching Experience

Participants were asked to report how many years they have been in higher education on a multiple-choice question. The question included five options: 0-5, 6-10, 11-15, 16-20, and 21 or more years. The Kruskal-Wallis H test indicated that no statistically significant difference was identified in the extent of teaching online literacy courses among the different teaching experience groups, $\chi 2$ (4, 269) = 3.40, p = .49, with a mean rank of 117.59 for 0-5, 136.77 for 6-10, 136.73 for 11-15, 143.27 for 16-20, and 139.37 for 21 or more years.

Academic Rank

The survey question for academic rank originally included seven options: distinguished professor, full professor, associated professor, assistant professor, lecturer/instructor, adjunct, and others. The total responses in four categories were relatively or too small: distinguished professor (n=11), lecturer/instructor (n=16), adjunct (n=8), and others (n=2, one was a research professor and the other a clinical assistant professor). Those responses in the distinguished professor option were aggregated into the full professor category, and the responses in the three options of lecturer/instructor, adjunct, and others were combined into one category, which resulted in the rearrangement with four academic status categories. The Kruskal-Wallis H test indicated that there was no statistically significant difference in the extent of teaching online literacy courses among the different academic status groups, $\chi 2$ (3, 267) = 5.64, p = .13, with a mean rank of 106.77 for lecturer, adjunct or others, 130.24 for assistant professor, 144.09 for associate professor, and 134.19 for distinguished or full professor.

Teaching Level

Originally, four options were included in the survey question of teaching level: all graduate courses, mostly graduate courses, mostly undergraduate courses, and all undergraduate courses. Because the responses in the all undergraduate category (n=14) was relatively small, those responses were aggregated into the category of the mostly undergraduate courses. To make the options parallel, the responses in all graduate and mostly graduate courses were accordingly aggregated. The Mann-Whitney test indicated that the extent of teaching online literacy courses reported by the respondents teaching at mostly graduate level was significantly greater than the extent by those teaching mostly at undergraduate level, U (269) = 6406.00, $p < .01$. The respondents who were teaching mostly at graduate level had a mean rank of 142.99, whereas the others who were teaching mostly undergraduate courses had a mean rank of 117.99.

Technological Skill

Participants were also asked to indicate the extent to which they perceived themselves skilled and knowledgeable in regard to using digital online technology. 89 respondents reported that they were greatly skilled and knowledgeable. Many (n=154) perceived themselves moderately skilled and knowledgeable, whereas only 27 members reported that they were minimally skilled and knowledgeable. None of the participants perceived themselves not skilled nor knowledgeable at all, thus, this variable was reduced to three levels. The Kruskal-Wallis H test indicated that there was a statistically significant difference in the extent of teaching online courses among the three groups, $\chi 2$

(2, 270) = 21.18, $p < .001$, with a mean rank of 85.57 for the minimal, 131,17 for the moderate, and 158.15 for the greatly skilled and knowledgeable group.

A Kruskal-Wallis H test only informs that there are any between-condition differences between the mean ranks that exist. Thus, *post hoc* tests were needed to evaluate pairwise differences among the mean ranks. It actually means taking every pair of conditions and then performing a Mann-Whitney test on each pair of conditions. However, lots of Mann-Whitney tests inflate the Type 1 error, so that a Bonferroni correction is needed, adjusting a critical value of .05 (a value of significance or α) by dividing it by the number of tests conducted (Field, 2009).

Post hoc tests using a Mann-Whitney test with a Bonferroni correction, an adjustment of α from .05 to .017 (= 0.05/3, because, in this case, there were three pairs of conditions), indicated that respondents with greater technological skill were teaching online courses at a significantly higher level than those with moderate technological skill: U (243) = 5452.50, $p < .01$, and those with minimal technological skill: U (116) = 586.50, $p < .01$. There was also a significant difference between the minimal and moderate group: U (181) = 1346.00, $p < .01$.

Overall, respondents with greater technological skill reported notably higher level of teaching online literacy courses. More online teaching were also reported for graduate courses, as might be expected. Faculty with more than 15 years of experience, and at the rank of associate professor reported somewhat more online teaching even though the greater extent of online teaching did not reach a statistically significant level.

Extent of Teaching Online Literacy Courses by Circumstances

The data representing the extent of online teaching with a four point scale (never, hardly ever, occasionally, and regularly) were again disaggregated in relation to the following circumstances: (a) source of motivation, (b) required vs. voluntary teaching of online courses, (c) whether guidance and direction were provided, (d) institutional classification, (e) institutional prevalence of online courses, (f) technological infrastructure, (g) institutional support, (h) whether training was provided, and (i) whether there were explicit incentives for online teaching. These circumstances were extracted from the literature review summarized in Chapter 2 and were expected to have an influence on the extent of literacy faculty's online teaching.

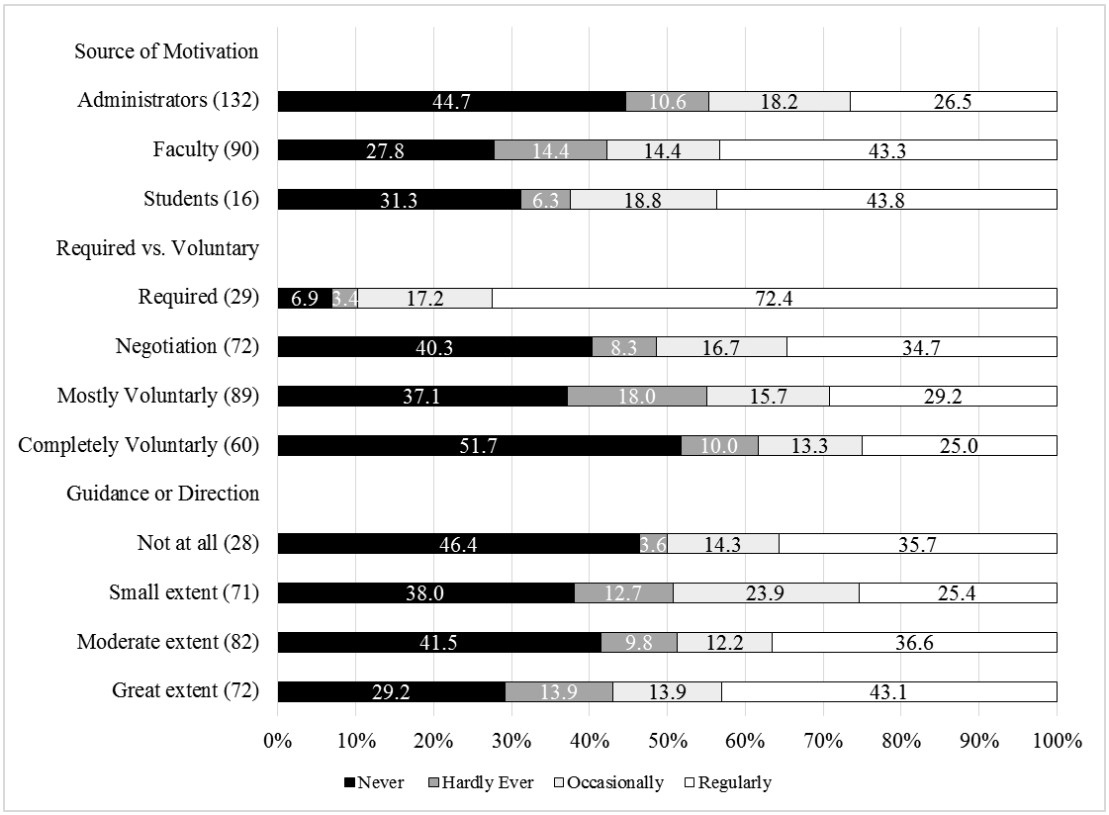


Figure 4.4. Extent of teaching online literacy courses by three circumstances at the academic units

Participants were asked to report the first three circumstances regarding their academic units, whereas the other six circumstances were in relation to their institutions. Figure 4.4 summarizes the percentage frequency distributions with which respondents reported teaching online courses at four different levels by the first three circumstances at their academic units.

Source of Motivation

Participants were asked to indicate where, in their academic units, the motivation for developing and offering online courses most often originated. A multiple-choice question for source of motivation originally included five options: administrators, faculty, students, others, and I don't know or not applicable. Nineteen responses in the option of I don't know or not applicable, were excluded for further analyses. There were ten responses in the option of others. Five of them reported that the motivation originated mostly by way of negotiations among the administrators, faculty, and students. The others indicated that the motivation depended on program needs, types of courses, budget, increasing enrollment, or needs for online education. Those ten responses were removed for further analyses as well.

Nearly half of the respondents (49.1%) reported that the motivation most often originated from their administrators, whereas one third of the faculty members (33.5%) reported from faculty themselves, and only 16 respondents (5.9%) identified students as the source of motivation. The Kruskal-Wallis H test indicated that the extent of teaching online literacy courses were significantly different by source of motivation, $\chi 2\ (2, 238) = 8.25$, $p < .05$, with a mean rank of 108.59 for those whose motivation mostly from their

administrators, 133.11 for those whose motivation was originated mostly from faculty themselves, and 132.16 for those whose motivation from their students.

Post hoc tests using the Mann-Whitney test with a Bonferroni correction, an adjustment of the value of significance (α) from .05 to .017 when there are three conditions, indicated that only respondents reporting their motivation mostly originated from faculty themselves were teaching online literacy courses at a significantly higher level than those with administer-originated motivation: U (222) = 4714.00, $p < .01$. There was no difference between the two groups with students-originated motivation and administer-originated motivation.

Required vs. Voluntary

The survey question for required vs. voluntary teaching of online courses included five options: required, a negotiation between faculty and administrators, mostly voluntary, completely voluntarily, and I don't know or not applicable. Nineteen responses in the option of I don't know or not applicable were removed. Slightly more than one tenth of the respondents (n=29) reported online teaching was required in their academic units, whereas 26.8% (n=72) reported a negotiation between faculty and administrators. More than half of the respondents (55.4%, n=149) reported online teaching was mostly or completely voluntarily.

The Kruskal-Wallis H test indicated that the extent of online teaching by the variable required vs. voluntary was significantly different, $\chi 2$ (3, 250) = 24.55, $p < .00$, with a mean rank of 181.83 for those whose online teaching was required, 124.38 for

those whose online teaching is a negotiation, 120.70 for those whose online teaching was mostly voluntary, and 106.75 for those whose online teaching was completely voluntary.

Post hoc tests using the Mann-Whitney test with a Bonferroni correction, an adjustment of the value of significance (α) from .05 to .008 when there are four conditions, indicated that the extent of teaching online literacy courses was significantly greater for those whose online teaching was required than other three groups: U (101) = 572.50, $p < .001$ for a negotiation between faculty and administrators; U (118) = 631.00, $p < .001$ for mostly voluntary; U (89) = 367.50, $p < .001$ for completely voluntary. There were no statistically significant differences among the other three groups.

Guidance/Direction

Participants were asked to indicate the extent to which their academic units provided guidance/direction for developing, offering, and teaching online courses. The scale of guidance/direction included five levels: not at all, small extent, moderate extent, great extent, and I don't know or doesn't apply. Fifteen responses in the option of I don't know or doesn't apply, were removed. Thirty-one percent of the respondents (n=82) reported that their academic units provided guidance and direction to a moderate extent: a great extent (26.9%), a small extent (26.5%), and no guidance and direction (10.4%). The Kruskal-Wallis H test indicated that the extent of teaching online literacy courses by guidance/direction was not significantly different among the three groups, $\chi 2$ (3, 253) = 3.32, $p = .35$, with a mean rank of 121.41 for those with no guidance and direction, 119.60 for those with small extent guidance, 124.61 for those with moderate extent guidance, and 139.19 for those who reported great extent guidance.

Overall, at the level of their academic unit, literacy faculty members reported more teaching online when they were required to do so and when the motivation for developing and offering online courses originated from faculty themselves rather than their administrators. Specifically, with regard to required vs. voluntary, whether online teaching was required was far more important than voluntary involvement. The differences in extent of teaching literacy online courses were not statistically significant in regard to guidance/direction at the level of their academic units.

Their responses on the extent of online teaching with a four point scale (never, hardly ever, occasionally, and regularly) were again disaggregated in relation to (d) institutional classification, (e) institutional prevalence of online courses, (f) technological infrastructure, and (g) institutional support, (h) whether training was provided, and (i) whether there were explicit incentives for online teaching at their institutions. Those six circumstances were reported regarding to participants' institutions, whereas they reported the previous three circumstances in relation with their academic units: (a) source of motivation, (b) required vs. voluntary teaching of online courses, (c) whether guidance and direction were provided. The results were summarized in Figure 4.5.

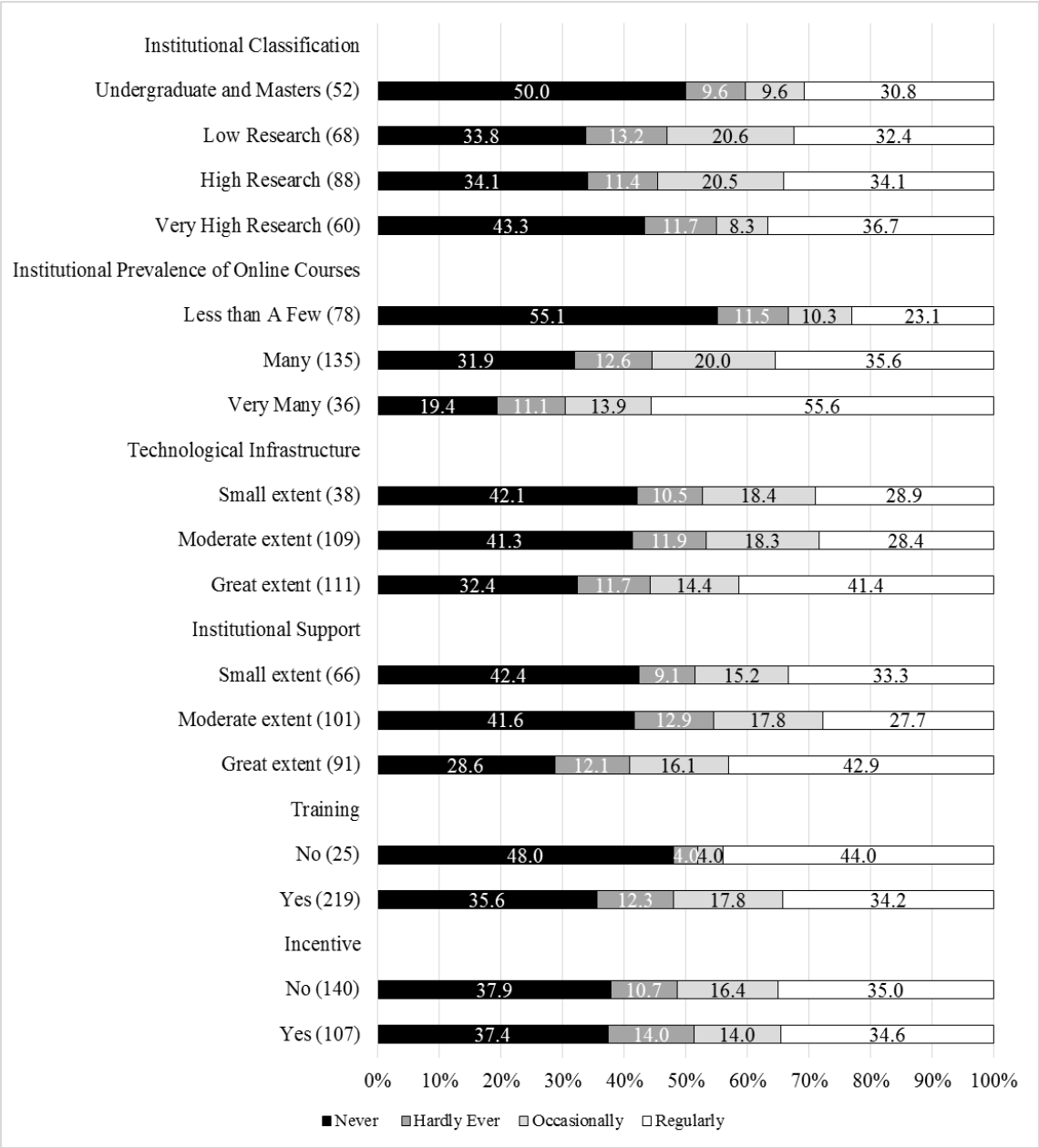


Figure 4.5. Extent of teaching online literacy courses by six circumstances at their institutions.

Institutional Classification

Participants were asked to report their institutional classification. The institutional classification was adapted from the 2010 edition of the Carnegie Classification

(http://carnegieclassifications.iu.edu) and originally included six options: undergraduate only, undergraduate and masters, low research activity (but awards doctoral degrees), high research activity, very high research activity, and I don't know or not applicable. One response was I don't know. Four responses in the option of undergraduate only were aggregated into the responses in the option of undergraduate and masters, resulting in four options (see Figure 4.5). The frequency distributions on those four options were relatively even, with 19.3% for the classification of undergraduate and masters, 25.3% for low research, 32.7% for high research, and 22.3% for very high research.

The Kruskal-Wallis H test indicated that the extent of teaching online literacy courses was not significantly different by institutional classification were, $\chi 2$ (3, 259) = 1.08, p = .78, with a mean rank of 122.13 for the undergraduate and masters' institutions, 132.68 for the low research institutions, 134.19 for the high research institutions, and 126.46 for the very high research institutions.

Institutional Prevalence of Online Courses

Participants were asked to report how prevalent online courses were at their institution as a whole. The scale for institutional prevalence of online courses originally included six levels: no, hardly any, a few, many, very many (online courses), and I don't know or not applicable. Twenty-one responses in the option of I don't know or not applicable were removed. Given that the total responses in the two levels of no (n=1) and hardly any (n=5) were too small, they were aggregated into the responses in the level of a few, then the level was renamed as less than a few. Half of the respondents (n=135)

reported many online courses, whereas 28.9% (n=78) reported less than a few online courses, and 13.3% (n=36) reported very many online courses.

The Kruskal-Wallis H test indicated that the extent of teaching online courses was significantly different by institutional prevalence of online courses, $\chi 2$ (2, 249) = 18.06, p < .00, with a mean rank of 100.80 for institutions of less than a few online courses 130.76 for institutions of many online courses, and 155.85 for institutions of very many online courses.

Post hoc tests using the Mann-Whitney test with a Bonferroni correction, an adjustment of the value of significance (α) from .05 to .017 when there are three conditions, indicated that the extent of teaching online literacy courses was significantly greater for those with very many online courses than those with less than a few online courses: U (114) = 807.50, p < .01. The extent for those with many online courses was also significantly greater than those with less than a few online courses: U (213) = 3794.00, p < .01. There was no statistically significant difference in the extent of teaching online courses between those with very many and many online courses, U (171) = 1916.00, p = 0.04.

Technological Infrastructure

Participants were asked to indicate the extent to which there was technological infrastructure for developing and teaching online courses at their institutions. After nine responses in the option of I don't know or not applicable were removed and one response in the level of not at all was aggregated into the responses in the level of small extent, frequency analysis indicated that 41.6% of the respondents (n=111) reported a great

extent of technological infrastructure for developing and teaching online courses at their institutions and 40.8% (n=109), a moderate extent of infrastructure, whereas 14.3% (n=38) reported limited technological infrastructure.

The Kruskal-Wallis H test indicated that the extent of online teaching was not significantly different by technological infrastructure, $\chi 2$ (2, 257) = 4.14, p = .13, with a mean rank of 119.38 for the institutions with small extent technological infrastructure, 121.85 for the institutions with moderate extent technological infrastructure, and 139.23 for the institutions with great extent technological infrastructure.

Institutional Support

Participants were asked to indicate the extent to which their institutions provided support for planning and developing online courses. After ten responses in the option of I don't know or not applicable were removed and 13 responses in the level of not at all were aggregated into the responses in the level of small extent, frequency analysis indicated that 71.3% of the respondents (n=192) reported a great or moderate support at their institutions, whereas 24.4% (n=66) reported a small extent of support.

The Kruskal-Wallis H test indicated that the extent of online teaching by institutional support were not significantly different, $\chi 2$ (2, 258) = 5.59, p = .06 with a mean rank of 124.47 for institutions with small extent support, 120.22 for institutions with moderate extent support, and 143.45 for institutions with great extent support.

Training

Participants were asked to report whether their institutions offered training for teaching online courses. Twenty-three responses in the option of I don't know or not

applicable were removed. Twenty-five respondents (9.4%) reported that their institutions did not offer any training for teaching online courses, whereas 82.0% (n=219) reported training available at their institutions.

The Mann-Whitney test indicated that the extent of online teaching was not significantly different by training, U (244) = 2680.50, p = .86, with a mean rank of 122.76 for others without training, and 120.22 for literacy faculty with training. These results must be carefully interpreted, because this variable was not asking about whether the participants actually took the training, but about whether they perceived their institutions were offering trainings for teaching online courses.

Incentives

Participants were asked whether their institutions provided any incentives for offering online courses. More than half of the participants (51.9%, n=140) reported no incentives, whereas 39.6% (n=107) reported one or more incentives. Two responses were I don't know or not applicable.

The Mann-Whitney test indicated that the extent of online teaching was not significantly different by incentives, U (247) = 7403.50, p = .95, with a mean rank of 123.26 for those without incentives, and 123.81 for others without incentives. These results must be carefully interpreted as well, because this variable was not asking about whether participants actually received those incentives for offering online courses, but about whether they perceived their institutions were offering some incentives for teaching online courses.

Respondents were also asked to identify the availability of incentives for developing and teaching online courses in their institutions, responding to a click-all-that-apply item that listed a variety of incentives. The proportion of respondents reported one or more incentives on the click-all-that-apply item was 39.6% (n=107). Table 4.1 summarized the results.

Table 4.1

Incentives Available to Faculty for Developing or Teaching Online Courses

Type of incentive	Percentage of respondents with this incentive available (Number of responses)
Increased salary or salary supplements	13.7 (37)
Summer employment	13.1 (32)
Additional support from staff	10.6 (26)
Graduate students' assistance	5.6 (15)
Advancement toward tenure and/or promotion	4.9 (12)
Reduction in teaching load	2.6 (7)
Extra travel funding	2.2 (6)

Table 4.1 shows that the most common incentive identified was salary supplements, followed by summer employment, and additional support from staff. The least common incentive was extra travel funding. Participants were also asked to specify any other incentives available that were not listed on the click-all-that-apply item,

responding to an open-ended question. Other incentives including technological devices (e.g., a laptop or an iPad), technology replacement, and special funding or grants were reported. Some reported monetary incentives with a unique payment scheme (e.g., extra pay for a student enrolled, initial stipend just for developing an online course, or one time stipend when completed training).

Overall, literacy faculty reported significantly more extensive teaching of online courses when online courses were prevalent at their institutional level as a whole. Under the other circumstances: institutional classification, technological infrastructure, institutional support, training, and incentives, the differences in extent of teaching online literacy courses were not statistically significant. Incentives available for developing and teaching online courses were relatively limited ranged from 2.2% to 13.7% on each incentive.

What Technological Components and Pedagogical Approaches Are Being Employed?

This research question aimed to investigate what technological components literacy faculty use in their instruction, how frequently they use them, and further to examine whether there are relationships among literacy faculty's use of specific technologies, their pedagogical approaches, and the extent of teaching online courses. Pedagogical approaches were defined as faculty members' perceptions about their instruction in Chapter 1, and the literature on pedagogical approaches were reviewed with relation to those two constructs in Chapter 2: (a) overall orientation of instruction and (b) perceived roles as an instructor.

To address these issues, participants in this study were asked to indicate how frequently they employed a variety of technological tools or activities in their literacy courses, whether the courses were conventional or online courses, how they identified their overall orientation of instruction, and how they characterized their roles as an instructor responding to a variety of possible options listed on a survey question.

Use of Technologies

Participants in this study were asked to indicate how frequently they employed a variety of technological tools or activities in their literacy courses whether the courses were conventional or online courses. Figure 4.6 summarized the percent with which literacy faculty members reported incorporating various technological tools or activities into their instruction at four different levels: not at all, hardly ever, occasionally, and frequently. Learning Management System (LMS, e.g., Blackboard), presentation tools, and video were the three most common technological components. The least commonly used technology was social networking, followed by visual poster and online quizzes. Nearly 90% of respondents were employing LMS frequently in their literacy courses, whereas more than 65% of the participants reported not using online quizzes, visual poster, and social networking at all or hardly ever.

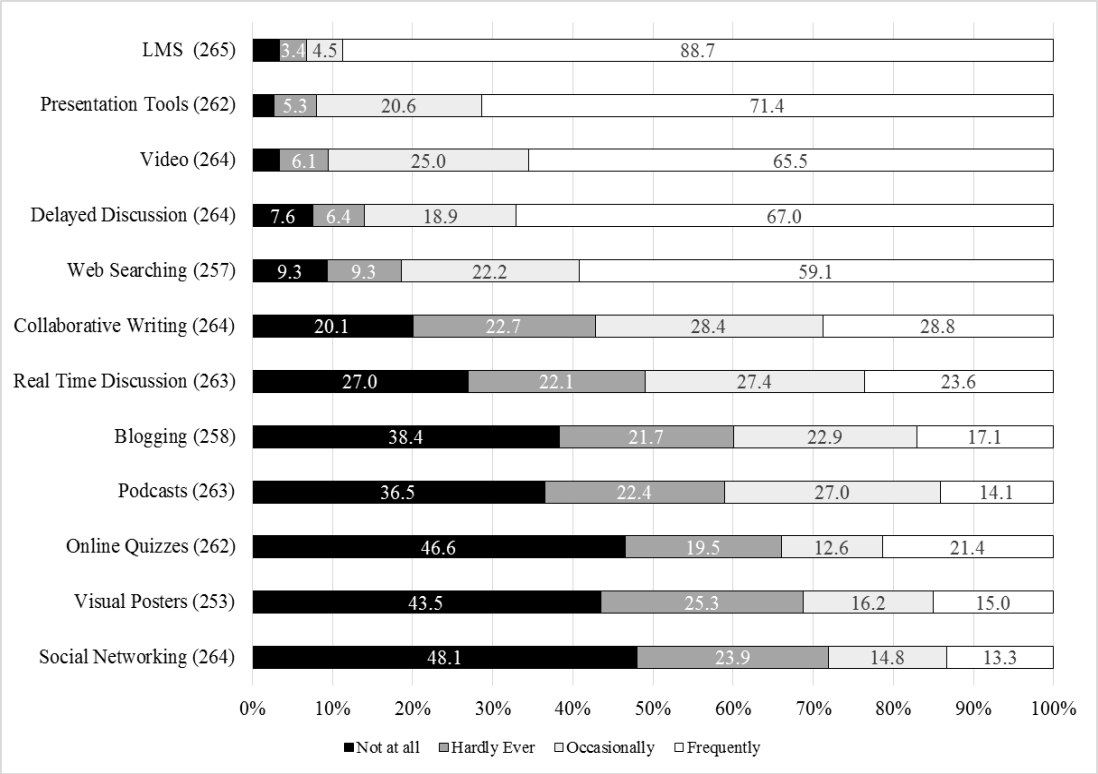


Figure 4.6. Percent frequency of technological components employed in literacy courses

Respondents were also asked to specify any other technologies that were not listed, responding to an open-ended item. There were 88 responses reporting various technologies (e.g., GoAnimate, Shelfari, Goodreads, VoiceThread, Animoto, Zoom, Wiki, ScreenCast, SoftChalk, Edthena, ScoopIT, LiveBinders, Panopto, Padlet, Web-based Timelines, Kaltura Media Gallery, iPod or iPad applications, and web sites such as www.tophat.com or www.librarything.com). Those responses suggested that literacy faculty members were using diverse technologies that were not included on the list.

Overall Orientation

Participants were asked to identify their overall orientation of instruction in relation to the following: (a) traditional (e.g., lecture/ required text and reading/ objective exams), (b) somewhat traditional (e.g., lecture/ discussion/ activities/ required and

optional readings/ objective and subjective items on exams), (c) a mix of traditional and constructivist orientation (e.g., lecture/ demonstrations/ activities/ student presentations/ independent student projects/ essay exams), (d) somewhat constructivist (e.g., minimal lecture/ much discussion/ small-group activities/ independent research/ students from choose from a list of optional readings/ optional exam or project), and (e) highly constructivist (e.g., student generated topics/ self-evaluation/ no exam/ independent or group research of interest,/ creative product).

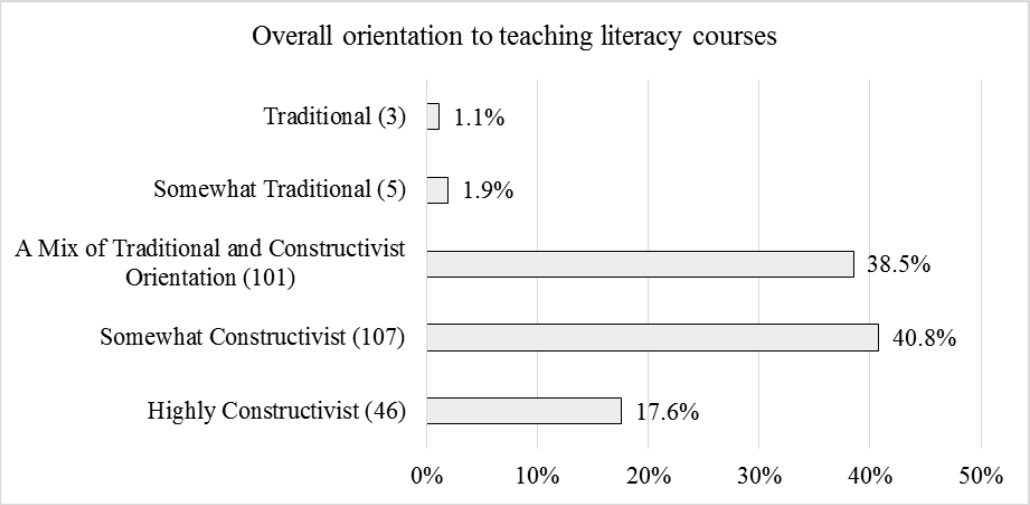


Figure 4.7. Literacy faculty's overall orientation to teaching literacy courses.

Figure 4.7 summarized the frequency distribution of responses with about overall orientation to teaching literacy courses. A constructivist orientation was clearly the most frequent among respondents with almost four out of five responses identifying with somewhat constructivist or a mix of a traditional and constructivist approaches. Only three percent of the participants reported their overall pedagogical orientation was traditional (n=3) or somewhat traditional (n=5).

Instructors' Role

Participants in this study were asked to indicate how they characterized their roles as an instructor responding to a variety of possible options listed on a survey question. Figure 4.8 summarized the percent frequency with which literacy faculty members reported the extent to which a role captured their perception about themselves as an instructor at four different levels: not at all, small, moderate, and great extent.

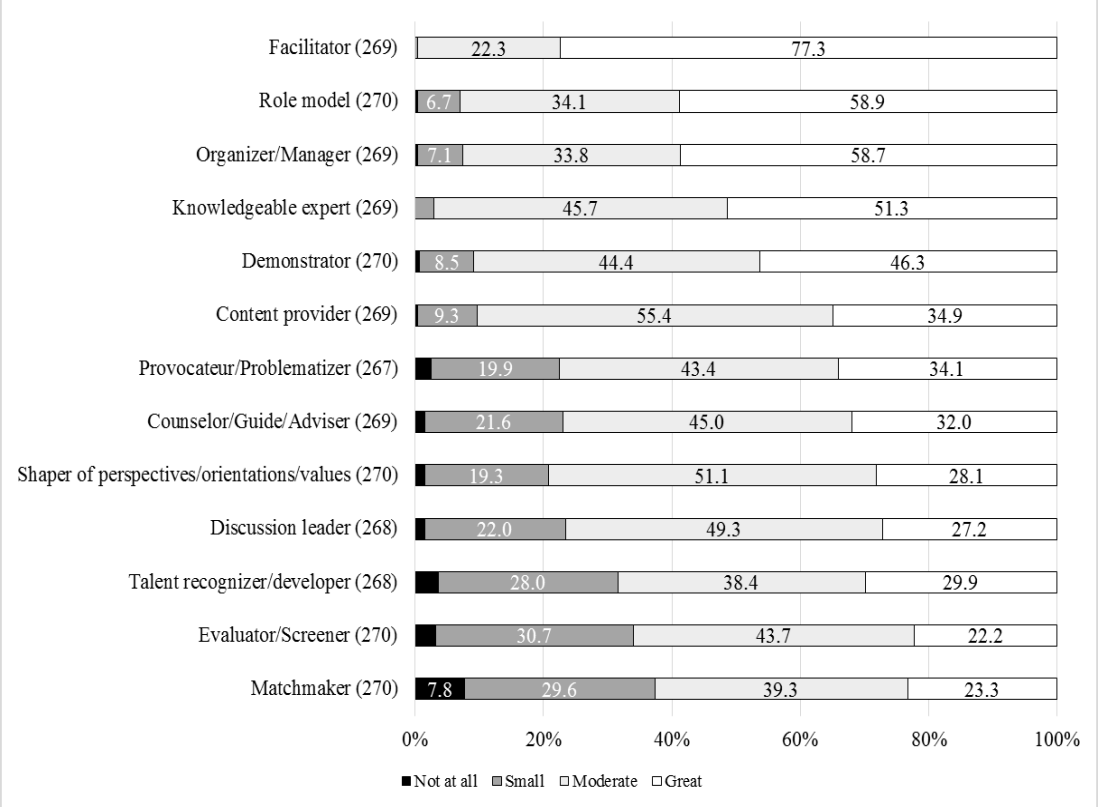


Figure 4.8. Literacy faculty's perception about their roles as an instructor in teaching literacy courses.

The role of a facilitator, role model, and organizer/manager were the three most common instructor's roles, whereas the least common role was the role of a matchmaker, followed by an evaluator, and a talent recognizer. The role of a facilitator was perceived as by almost every participant (99.6%) to a great or moderate extent. More than 90% of

literacy faculty perceived the roles of a role model, organizer/ manager, knowledgeable expert, demonstrator, and content provider to a great or moderate extent. However, the role of a matchmaker, the least common role, was perceived to a great or moderate extent by 62.6% of the respondents.

Use of Technologies and Pedagogical Orientation

To explore possible relations between the extents of literacy faculty's using specific technologies and their pedagogical orientation, correlational analyses were conducted. Given that both variables were measured on an ordinal scale, Spearman rank correlation coefficients were calculated. For the analysis, each of the levels included in technology use and in overall pedagogical orientation was coded with a numeric value based on their order; for technology use (0 = not at all, 1 = hardly ever, 2 = occasionally, and 3 = frequently) and for overall orientation (0 = traditional, 1 = somewhat traditional, 2 = a mix of traditional and constructivist orientation, 3 = somewhat constructivist, and 4 = highly constructivist). Table 4.2 summarized Spearman correlation coefficients between the use of each technological component and their overall orientation.

Table 4.2

Correlations between Use of Each Technological Component and Overall Orientation

	Overall Orientation
	Spearman Rho coefficient
Collaborative writing (256)	.20**
Real time discussion (255)	.17**
Podcasts (255)	.17**

Blogging (250)	.16*
Social networking (256)	.14*
Web searching (249)	.13*
Visual posters (245)	.08
Delayed discussion (256)	.00
Online quizzes (254)	-.18**
Presentation tools (254)	-.15*
Learning management system (257)	-.03
Video (256)	-.02

Note. ** * Correlation is significant at .01, .05 level respectively (2-tailed).

Respondents' overall orientation toward constructivist approaches was positively associated with use of collaborative writing, real time discussion, podcasts, blogging, social networking, and web searching. Their orientation was negatively correlated at statistically significant levels with the use of online quizzes and presentation tools. The use of visual posters, delayed discussion, LMS, and video were not significantly associated with their overall orientation. The correlations with the use of LMS and video were negative.

Use of Technologies and Instructors' Role

To explore possible relations between the extent of literacy faculty's using specific technologies and each of their perceived role as an instructor, Spearman rank correlation coefficients were also calculated. Each of the levels included in technology use was coded as follows: for technology use, (0 = not at all, 1 = hardly ever, 2 =

occasionally, and 3 = frequently) and for instructors' role, (0 = not at all, 1 = small extent, 2 = moderate extent, and 3 = great extent). Table 4.3 summarized Spearman correlation coefficients between use of each technological component and their perceived role as an instructor.

At statistically significant levels, a perceived role of matchmaker that is defined on the survey item as connecting students with relevant people and resources was positively associated with the use of many technological components: web searching, collaborative writing, real time discussion, blogging, podcasts, and social networking. A perceived role of provocateur (problematizer) was also significantly and positively correlated with the use of collaborative writing, Blogging, and social networking. The use of social networking was also associated with a perceived role of counsellor at a statistically significant level. A negative correlation at statistically significant levels was found between a role of content provider and the use of collaborative writing, and Blogging, and between a role of evaluator and the use of Blogging.

Table 4.3

Correlations between Use of Each Technological Component and Perceived Role as an Instructor

	Facilitator	Role Model	Organizer	Knowledge Expert	Demonstrator	Content Provider	Provocateur	Counselor	Shaper of Perspectives	Discussion Leader	Talent Recognizer	Evaluator	Matchmaker
LMS	-.04	.01	.01	.07	.05	.03	-.06	-.05	.10	-.05	-.09	-.07	-.07
Presentation tools	-.01	.04	.04	.06	.10	.05	-.00	-.01	.10	.09	.01	-.01	.04
Video	-.07	-.05	.06	.06	-.01	-.06	.03	-.03	.01	-.05	.04	-.04	.05
Delayed discussion	.03	.01	.03	-.00	-.02	.00	-.05	-.02	.07	-.10	.00	-.10	.09
Web searching	.03	.03	.00	-.00	-.00	-.10	.07	.07	.01	.06	.11	-.02	**.17****
Collaborative writing	.07	-.04	-.08	.01	-.06	**-.12***	**.15***	.09	-.06	.08	.06	-.11	**.19****
Real time discussion	.03	-.06	.01	-.03	-.03	-.10	.09	.11	.01	.04	.12	-.11	**.22****
Blogging	.06	-.03	.06	-.04	-.08	**-.18****	**.16***	-.01	.02	.08	.01	**-.15***	**.15***
Podcasts	.07	.05	.03	.03	-.00	.01	.06	.04	.10	-.09	.06	-.09	**.17****
Online quizzes	-.04	-.02	.10	.07	.05	.01	-.04	.09	-.02	-.10	-.11	.08	-.12
Visual posters	-.02	.08	-.01	.01	-.03	-.04	.12	.07	.04	.01	.12	-.06	.11
Social networking	.06	.03	.05	-.01	-.01	-.12	**.19****	**.16****	.04	.10	.10	-.03	**.22****

Note. **, * Correlation is significant at the .01, .05 level respectively (2-tailed).

Use of Technologies and Extent of Teaching Online Literacy Courses

Spearman rank correlation coefficients were also calculated to explore possible relations between the extent of using each of technological components and the extent of teaching online literacy courses. Table 4.4 summarizes Spearman correlation coefficients

Table 4.4

Correlations between Use of Each Technological Component and Extent of Teaching Online Literacy Courses

	Extent of teaching online literacy courses
	Spearman Rho coefficient
Delayed discussion (264)	.51**
Real time discussion (263)	.31**
Online quizzes (262)	.27**
Learning management system (265)	.26**
Video (264)	.22**
Podcasts (263)	.22**
Visual posters (253)	.21**
Blogging (258)	.19**
Social networking (264)	.11
Web searching (257)	.01
Collaborative writing (264)	.01
Presentation tools (262)	-.04

Note. **, * Correlation is significant at the 0.01, 0.05 level respectively (2-tailed).

Respondents' extent of online teaching was positively correlated at statistically significant levels with the use of delayed discussion, followed by real time discussion, online quizzes, learning management system, video, podcasts, visual posters, and blogging, indicating that the greater extent of teaching literacy courses, the more frequent use of such technological components. The extent of teaching online literacy courses was not significantly correlated with the use of social networking, web searching, and collaborative writing. There was a negative, but non-significant, correlation with the use of presentation tools.

Overall Orientation and Extent of Teaching Online Literacy Courses

Spearman rank correlation coefficients were computed to explore a possible relation between literacy faculty's overall orientation and the extent of teaching online literacy courses. Respondents' overall orientation toward constructivist approaches was not correlated with the extent of teaching online courses at a statistically significant level: $r_s = .046$, n = 262, $p = .23$.

Instructors' Role and Extent of Teaching Online Literacy Courses

Spearman correlation coefficients were calculated to explore possible relations between each perceived role as an instructor and the extent of teaching online literacy courses. Table 4.5 summarized the results.

Table 4.5

Correlations between Each Perceived Role as an Instructor and Extent of Teaching Online Literacy Courses

	Extent of teaching online literacy courses

	Spearman Rho coefficient
Organizer (269)	.17**
Knowledgeable expert (269)	.10
Matchmaker (270)	.06
Evaluator (270)	.04
Content provider (269)	.03
Demonstrator (270)	.03
Talent recognizer (268)	.01
Facilitator (269)	.01
Shaper of perspectives (270)	.00
Role model (270)	-.04
Provocateur (267)	-.04
Counselor (269)	-.05
Discussion leader (268)	-.12

Note. ** Correlation is significant at the 0.01 level respectively (2-tailed).

When correlating their responses on the scale of instructor's roles with their extent of teaching online courses, there was a weak, statistically significant, positive relation between respondents' extent of online teaching and characterizing their role as organizer. Respondents reporting greater extent of teaching online courses characterized themselves as more of an organizer.

What Are the Perceived Advantages and Obstacles to Developing and Teaching Online Literacy Courses?

This research question aimed to investigate to what extent literacy faculty perceived advantages and obstacles to developing and teaching online courses. Further, how literacy faculty members perceive specific course components well-matched or poorly-matched to online teaching was investigated. The correlations between three variables and the extent of teaching online literacy courses were also investigated.

Perceived Advantages of Online Courses

Literacy faculty members were asked to rate the relative advantage of reasons for teaching literacy courses online using three levels (not justifiable, somewhat justifiable, and very justifiable). Ten justifiable advantages of online courses, which were previously identified from the literature review and summarized in Chapter 2, were rated. Figure 4.9 summarized the results.

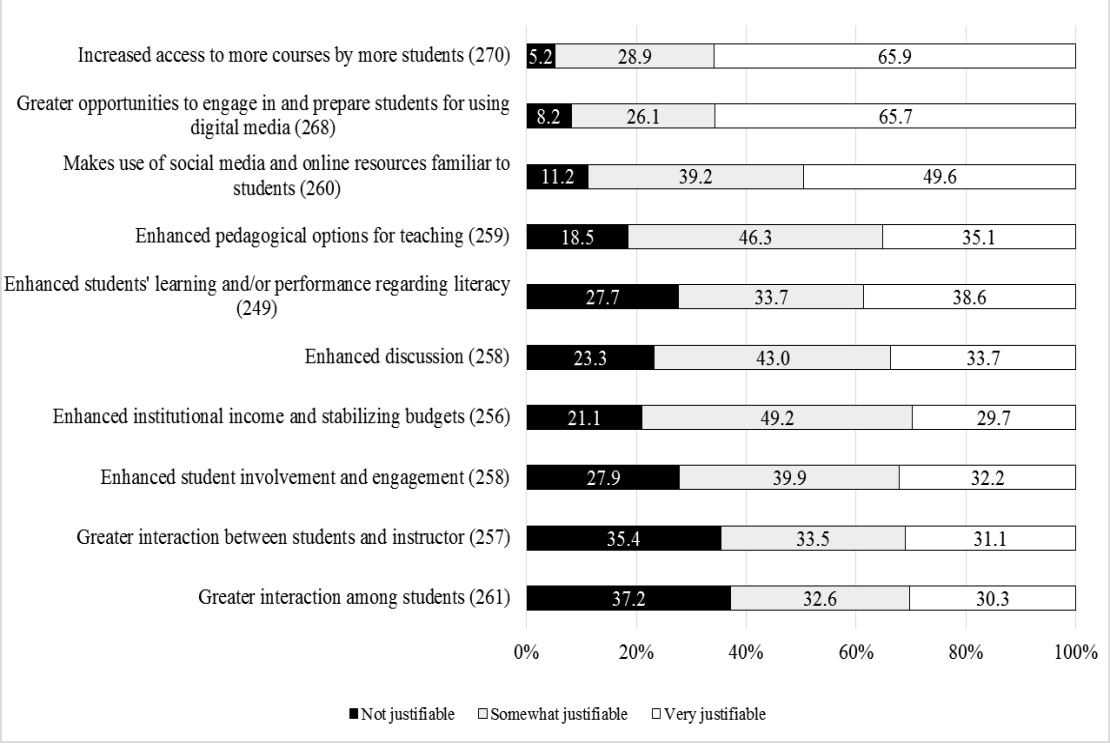


Figure 4.9. Literacy faculty's perceived advantages of online courses.

The most justifiable advantage was increased access, followed by greater opportunities for using digital media, and making social media familiar to students. The least justifiable advantage was greater interaction among students, followed by greater interaction between students and instructor, and enhanced student engagement.

Nearly, 66% of the respondents reported increased access to more courses by more students and greater opportunities for using digital media as very justifiable. Slightly less than half of the respondents perceived making social media and online resources familiar to students as very justifiable. More than one third of the respondents perceived greater interaction between students and instructor, as well as among students as not justifiable for offering literacy courses online.

Other Advantages of Online Courses

Respondents were also asked to specify any other advantages they perceived justifiable to teaching literacy courses online. There were thirteen responses including building students' confidence to use technology for teaching and learning, student schedule management, enhanced opportunities for informal and network learning, a college-wide assessment tool, enhanced statewide support, and modeling online behaviors.

Perceived Obstacles to Developing and Teaching Online Courses

Participants were asked to indicate the extent to which they perceived potential barriers, challenges or obstacles interfered with implementing online literacy courses at four levels (not at all, small extent, moderate extent, and great extent). Ten potential obstacles to implementing online literacy courses, which were identified previously from

the literature review in Chapter 2, were rated. Figure 4.10 summarized the results. Time and resources for development was reported as the most common obstacle, followed by faculty biases against online teaching, and training of faculty. The least perceived obstacle to implementing online literacy courses was cost and resources, followed by copyright issues, and students' technology skills.

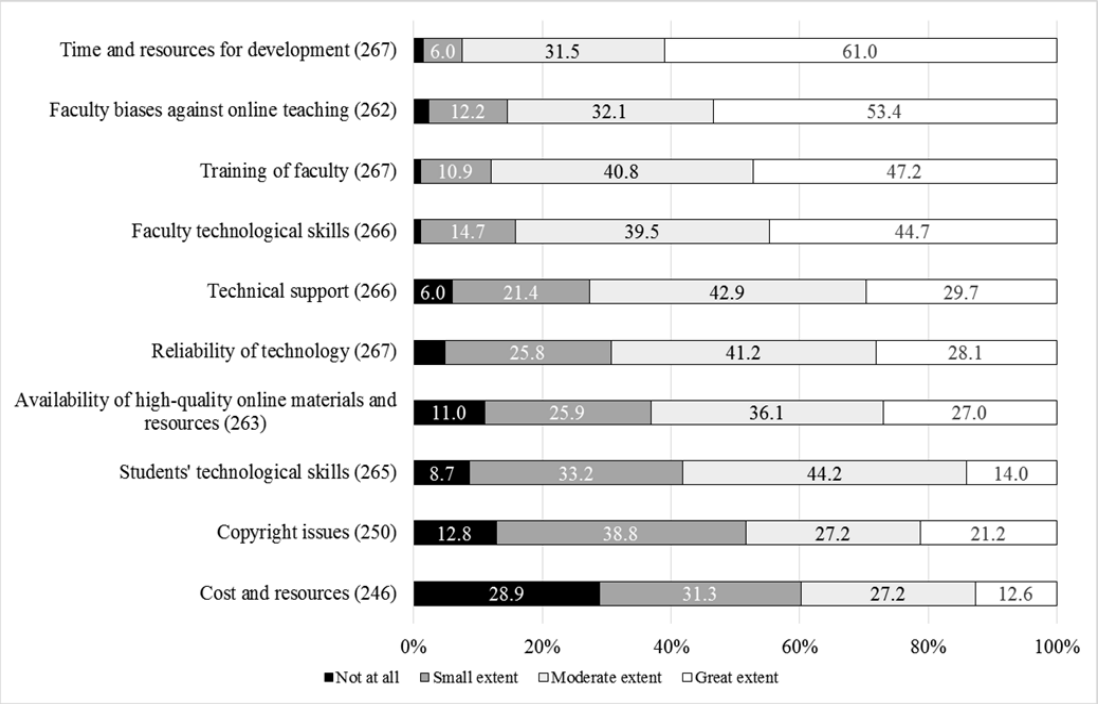


Figure 4.10. Literacy faculty's perceived obstacles to implementing online courses.

Sixty-one percent of the respondents perceived time and resources for development as an obstacle to a great extent. More than half of the respondents reported faculty biases against online teaching as an obstacle to a great extent. Training, and technology related obstacles: (a) faculty technological skills, (b) technical support, and (c) reliability of technology were also reported as considerable challenges. Students' technology skill, copyright issues, and cost and resources were relatively of lesser concern.

Other Obstacles to Developing and Teaching Online Courses

Participants were also asked to specify any other obstacles to implementing online literacy courses. Eighteen responses were reported. Table 4.6 summarized those obstacles with the representative responses.

Table 4.6

Other Obstacles to Implementing Online Literacy Courses

Other obstacles	Representative responses
Students related	Mindset of students that online is less demanding than face to face; Students who are self-regulating tend to do better than those who are not
Faculty related	Creation of learning culture; Internet access and latest technology to use sophisticated instruction particularly for low SES remedial freshmen students
Administrator related	Administrative level support and understanding of how much it takes for faculty to prepare quality online courses, certificates, and programs; Institutional commitment with support
Teacher education related	Loss of modeling teaching practices and processes in real time with novice teacher candidates

Perceived Suitability of Course Components

To investigate how literacy faculty members perceived specific course components well-matched or poorly matched to online teaching, participants were asked to indicate the extent to which specific elements of a course were well-matched or poorly-matched to online teaching at four different levels (very poorly matched, poorly matched, well matched, and very well matched). Figure 4. 11 summarized the results.

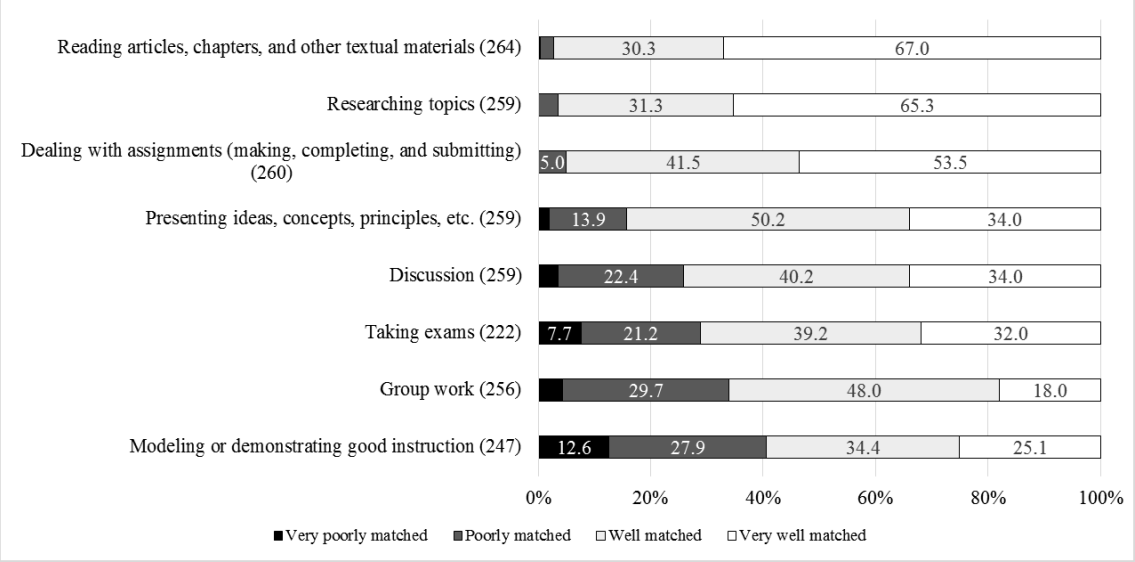


Figure 4.11. Literacy faculty's perception about suitability of course components for online teaching.

The frequency distributions of their responses showed that respondents were relatively favorable for all the course components listed with regard to accommodating them within an entirely online format. Reading articles, chapters, and other textual materials; researching topics; and dealing with assignments were identified as the three most well-matched course components. The least well-matched component was modeling or demonstrating good instruction, followed by group work, and taking exams.

Other Course Components Perceived Well-matched or Poorly-matched

Respondents reported to the two open-ended questions designed to specify any other course components or activities well-matched and poorly matched to online teaching. Forty-eight responses reported course or instructional components well-matched to online teaching and 47 responses for poorly matched. Table 4.7 summarized the course components with representative responses reported as well-matched and poorly-matched to teaching online literacy courses

Table. 4.7

Well-matched and Poorly-matched Course Components to Online Teaching

Courses components	Representative responses
	Well-matched
Collaborative/Creative writing,	Collaboratively designing presentations; Creative writing and feedback
Differentiated/Individualized instruction	Helping students achieve their maximum potential has occurred multiple times through online instruction; Diversifying instruction
Multi-faceted Feedback	Substantive, precise, line-by-line feedback on digital artifacts and assignments such as video book talks and trailers, to be uploaded to the site and viewed and commented upon by other students in the class.
Multimodality	Multimodal responses to literature; multimodal composition; Assignments that result in student-created multimedia products

Publishing/ Journaling	Student work, such as video book talks and trailers.
Reflection	Candidates preparing video recordings of their teaching literacy lessons; Analysis of teaching; Videotaping instructional activity and sharing these tapes with one another and the class supporting one another in best practices
Sharing	Student sharing of observations (e.g. field observations), research, or pedagogical innovations;
	Poorly-matched
Feedback/ Interaction	Real time interaction; Synchronous group meeting in different time zones; Reading non-verbal cues; "On the spot" feedback
Lecture/ Discussion	Synchronous traditional lectures; Socratic discussions; Didactic teaching
Modeling	Modeling teaching strategies; Checking for understanding after modeling; Modeling to teacher candidates how to coach literacy; Teaching demonstrations
Practicum/Practice	Practicum experiences; Translating the course content into classroom practices; Supervising clinical and diagnostic instruction/ Field assignments

Interestingly, respondents' perception about the suitability of course components to online teaching was often conflicted. Table 4.8 provided illustrative responses.

Table. 4.8

Literacy Faculty's Conflicted Perception about Suitability of Couse Components to Online Teaching

Course components	Representative responses	
	Well-matched	Poorly-matched
Collaborative work	Collaborative, project based work where students consume and produce products collaboratively, online, and shared online	Collaboration involving artifacts and real time interaction
Discourse	Space for guided, contingent, responsive and responsible discourse on shared topic of interest	I cannot overstate my concerns about presence and quality of discourse.
Literacy assessment	Literacy assessment administration instruction is well-suited online where students can stop and start as needed	One on one practice with a live student administering literacy assessments

Literature circle	I have done literature circle discussions online, in a synchronous manner using google chat, and that has been successful.	You have to participate in a literature circle in order to process how to teach it.
Reading clinic	The teachers share ways that they already differentiate their assessment, methods, materials, and instructional practices to assist struggling readers and writers and they discuss strategies that they are learning.	Working with children to support literacy learning.

Perceived Advantages and Extent of Teaching Online Literacy Courses

Spearman correlation coefficients were calculated to explore possible relations between the perceived advantages of online courses and the extent of teaching online literacy courses. The levels of the perceived advantages were coded with numeric values as follows: (0 = not justifiable, 1 = somewhat justifiable, 2 = very justifiable). Table 4.9 summarized the results.

Table 4.9

Correlations between Perceived Advantages of Online Courses and Extent of Teaching Online Literacy Courses

	Extent of teaching online courses
	Spearman Rho coefficient
Enhanced discussion (258)	.30**
Greater interaction among students (263)	.29**
Enhanced student involvement and engagement (258)	.29**
Greater interaction between students and instructor (257)	.29**
Enhanced pedagogical options for teaching (259)	.28**
Enhanced students' learning and/or performance regarding literacy (249)	.28**
Increased access to more courses by more students (270)	.20**
Greater opportunities to engage in and prepare students for using digital media (268)	.19**
Enhanced institutional income and stabilizing budget (256)	.16**
Make use of social media and online resources familiar to students (260)	.16**

Note. ** Correlation is significant at the 0.01 level (1-tailed)

There was a statistically significant relation between respondents' extent of online teaching and their perceived advantages of offering online courses across all the options on the survey item. The more responders were teaching online, the more advantages they perceived for online teaching.

Perceived Obstacles and Extent of Teaching Online Literacy Courses

Spearman correlation coefficients were calculated to explore possible relations between respondents' perceived obstacles and the extent of teaching online literacy courses. The levels included in the scale of obstacles of online courses were coded with a numeric value based on their order (0 = not at all, 1 = small extent, 2 = moderate extent, and 3 = great extent). Table 4.10 summarized the results.

Table 4.10

Correlations between Perceived Obstacles to Developing and Teaching Online Courses and Extent of Teaching Online Literacy Courses

	Extent of teaching online courses
	Spearman Rho coefficient
Availability of high-quality online materials and resources (263)	-.19**
Time and resources for development (267)	-.17**
Technical support (266)	-.17**
Reliability of technology (267)	-.15**
Copyright issues (250)	-.13*

Faculty biases (262)	-.06
Cost and resources (246)	-.05
Training of faculty (267)	-.05
Faculty technological skills (266)	.01
Student technological skills (265)	.10

Note. ** * Correlation is significant respectively at the 0.01, 0.05 level (1-tailed)

There was a negative relation between respondents' extent of online teaching and their perceived obstacles across all the options except faculty and students' technology skills. As for availability of high-quality online materials and resources, time and resources for development, technical support, reliability of technology, and copyright issues, the more literacy faculty members were teaching online, the less seriously they perceived most obstacles in their teaching. Faculty biases, cost and resources, and training of faculty were not significantly associated with the extent of online teaching. The extent of online teaching was positively, but non-significantly related to faculty and students' technological skills.

Perceived Suitability and Extent of Teaching Online Literacy Courses

Spearman correlation coefficients were calculated to explore relations between literacy faculty's perceptions about suitability of course components to an online environment and the extent of teaching online literacy courses. The levels included in the scale of the perceived suitability were coded with a numeric value based on their order (0 = very poorly matched, 1 = poorly matched, 2 = well-matched, and 3 = very well-matched). Table 4.11 summarized the results.

Table 4.11

Correlations between Suitability of Each of Course Components and Extent of Teaching Online Literacy Courses

	Extent of teaching online literacy courses
	Spearman Rho coefficient
Discussion (259)	.34**
Presenting ideas, concepts, principles, etc (259)	.31**
Dealing with assignments (260)	.23**
Group work (256)	.21**
Modeling good instruction (247)	.18**
Taking exams (222)	.14*
Researching topics (259)	.10
Reading articles, chapters, and other textual materials (264)	.10

Note. ** * Correlation is significant at the 0.01, 0.05 level respectively (2-tailed)

There was a positive, statically significant relation between respondents' extent of online teaching and their perception about the suitability of course components to an online environment across all the options except research topics and reading articles, chapters, and other textual materials. The strongest correlation was with discussion, followed by presenting ideas and dealing with assignments. The more respondents were

involved with teaching online, the more they perceived such course components (with a significant correlation) well-matched with online teaching.

To What Extent are Literacy Faculty's Attitudes toward Online Education Favorable?

This research question was designed to investigate to what extent literacy faculty's attitudes were favorable or unfavorable toward online education in general and the relations between their perceptions and the extent of positive attitudes. Participants were asked to respond to an attitude scale related to their general opinion about online courses when compared to teaching conventional courses at five different levels (much less desirable, less desirable, neither more or less desirable, more desirable, much more desirable). Figure 4.12 summarizes the results.

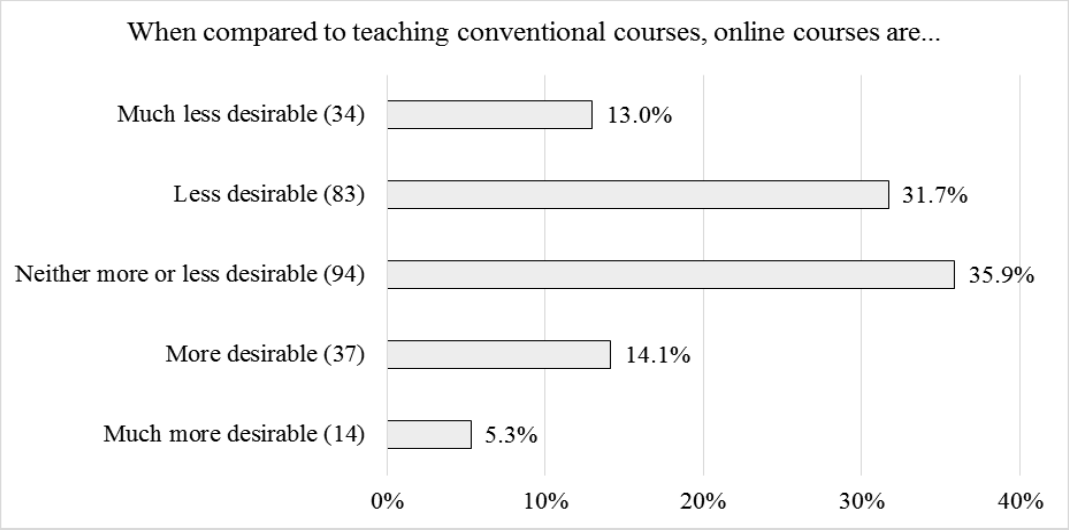


Figure 4.12. Literacy faculty's attitudes toward online courses in general.

Respondents' attitudes toward online courses in general were somewhat negative. Nearly 45% of the respondents reported that online courses were less desirable or much

less desirable than conventional course, whereas 20% reported more desirable or much more desirable.

Attitudes toward Online Courses and Perceived Advantages

The levels included in the scale of attitudes toward online courses were coded with a numeric value based on their order (0 = much less desirable, 1 = less desirable, 2 = neither more or less desirable, 3 = more desirable, and 4 = much more desirable). Spearman correlation coefficients were calculated to explore relations between literacy faculty's attitudes toward online courses and their perceptions about advantages of online teaching. Table 4.12 summarized the results.

Table 4.12

Correlations between Attitudes toward Online Courses and Perceived Advantages of Online Courses

	Attitudes toward online courses
	Spearman Rho coefficient
Enhanced pedagogical options for teaching (255)	.51**.
Greater interaction between students and instructor (253)	.51**
Enhanced students' learning and/or performance regarding literacy (245)	.48**
Enhanced student involvement and engagement (253)	.46**

Enhanced discussion (252)	.46**
Greater interaction among students (255)	.42**
Increased access to more courses by more students (262)	.33**
Make use of social media and online resources familiar to students (254)	.32**
Greater opportunities to engage in and prepare students for using digital media (261)	.24**
Enhanced institutional income and stabilizing budget (248)	.22**

Note. ** Correlation is significant at the 0.01 level (1-tailed)

There was a statistically significant relation between respondents' attitudes toward online courses and their perceived advantages across all the options on the survey item. The more responders' attitudes were favorable, the more advantages on the survey item they perceived for online teaching.

Attitudes toward Online Courses and Perceived Obstacles

Spearman correlation coefficients were calculated to explore possible relations between literacy faculty's attitudes toward online courses and their perceived obstacles. Table 4.13 summarized the results.

Table 4.13

Correlations between Attitudes toward Online Courses and Perceived Obstacles of Online Courses

	Attitudes toward online courses
	Spearman Rho coefficient
Availability of high-quality online materials and resources (257)	-.30**
Reliability of technology (267)	-.27**
Copyright issues (244)	-.21**
Technical support (260)	-.19**
Time and resources for development (261)	-.17**
Training of faculty (260)	-.07
Student technological skills (258)	-.05
Faculty biases (257)	-.02
Faculty technological skills (259)	.02
Cost and resources (240)	.07

Note. ** Correlation is significant respectively at the 0.01 level (1-tailed)

There was a negative relation between respondents' attitudes toward online courses and five of their perceived obstacles: availability of high-quality online materials and resources, reliability of technology, copyright issues, technical support, and time and resources for development. The more responders' attitudes were favorable, the less seriously they perceived such obstacles (with a significant correlation) in their teaching.

Respondents' attitudes toward online courses were positively, but non-significantly related to faculty technological skills and cost and resources.

Attitudes toward Online Courses and Perceived Suitability

Spearman correlation coefficients were calculated to explore possible relations between literacy faculty's attitudes toward online courses and their perceptions about the suitability of course components to an online environment. Table 4.14 summarized the results.

Table 4.14

Correlations between Attitudes toward Online Courses and Suitability of Course Components

	Attitudes toward online courses
	Spearman Rho coefficient
Discussion (253)	.43**
Group work (250)	.42**
Modeling good instruction (241)	.42**
Presenting ideas, concepts, principles, etc (253)	.38**
Dealing with assignments (254)	.29**
Reading articles, chapters, and other textual materials (258)	.28**
Taking exams (216)	.23**
Researching topics (253)	.22**

Note. **Correlation is significant at the 0.01 level respectively (1-tailed)

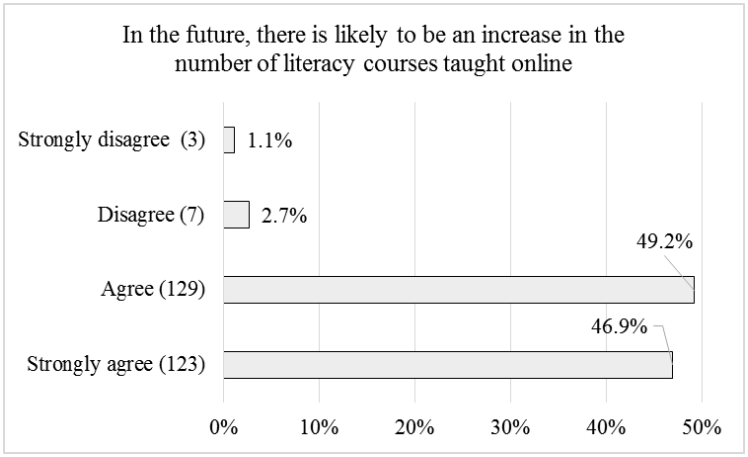
There was a positive, statically significant relation between respondents' attitudes toward online courses and their perception about the suitability of course components to an online environment across all the options. The strongest correlation was with discussion, followed by group work, and modeling good instruction.

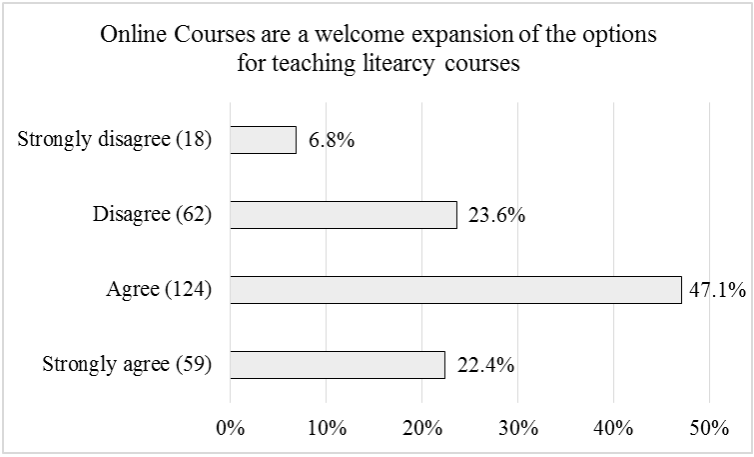
Attitudes toward Online Courses and Extent of Teaching Online Courses

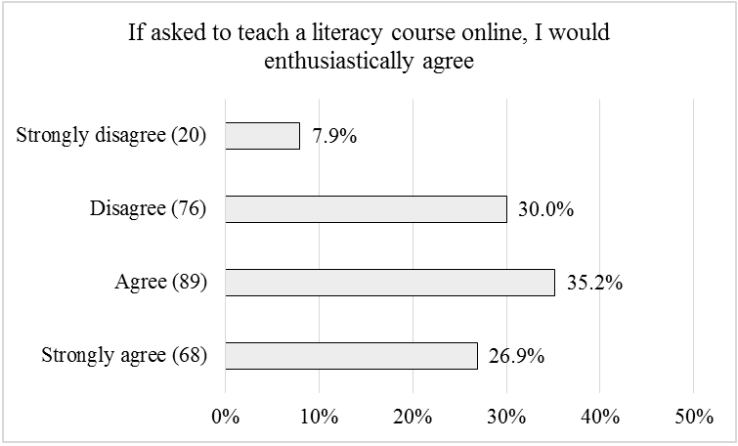
A spearman rank correlation coefficient was computed to explore a relation between literacy faculty's attitudes toward online courses and the extent of teaching online courses. The association was statistically significant: $r_s = .49$, n = 262, $p < .01$.

What Factors Account for Differences in Extent of Teaching Online Courses and Attitudes toward Offering Online Literacy Courses?

To measure participants' attitudes toward online literacy courses, an attitude scale containing six items was designed. The items were based on a four-point Likert scale that produced numerical responses. The responses on the scale of attitudes towards online literacy courses were coded with a numeric value (0 = strongly disagree, 1 = disagree, 2 = agree, and 3 = strongly agree) and the scores were used to create a composite, continuous variable for regression analyses. Cronbach's Alpha was calculated to test the reliability of the scale and yielded a coefficient of .81. Figure 4.13 summarized their responses on the six items.


In the future, there is likely to be an increase in the number of literacy courses taught online
Strongly disagree (3)
1.1%
Disagree (7)
2.7%
Agree (129)
49.2%
Strongly agree (123)
46.9%
0%
10%
20%
30%
40%
50%


Online Courses are a welcome expansion of the options for teaching litearcy courses
Strongly disagree (18)
6.8%
Disagree (62)
23.6%
Agree (124)
47.1%
Strongly agree (59)
22.4%
0%
10%
20%
30%
40%
50%


If asked to teach a literacy course online, I would enthusiastically agree
Strongly disagree (20)
7.9%
Disagree (76)
30.0%
Agree (89)
35.2%
Strongly agree (68)
26.9%
0%
10%
20%
30%
40%
50%

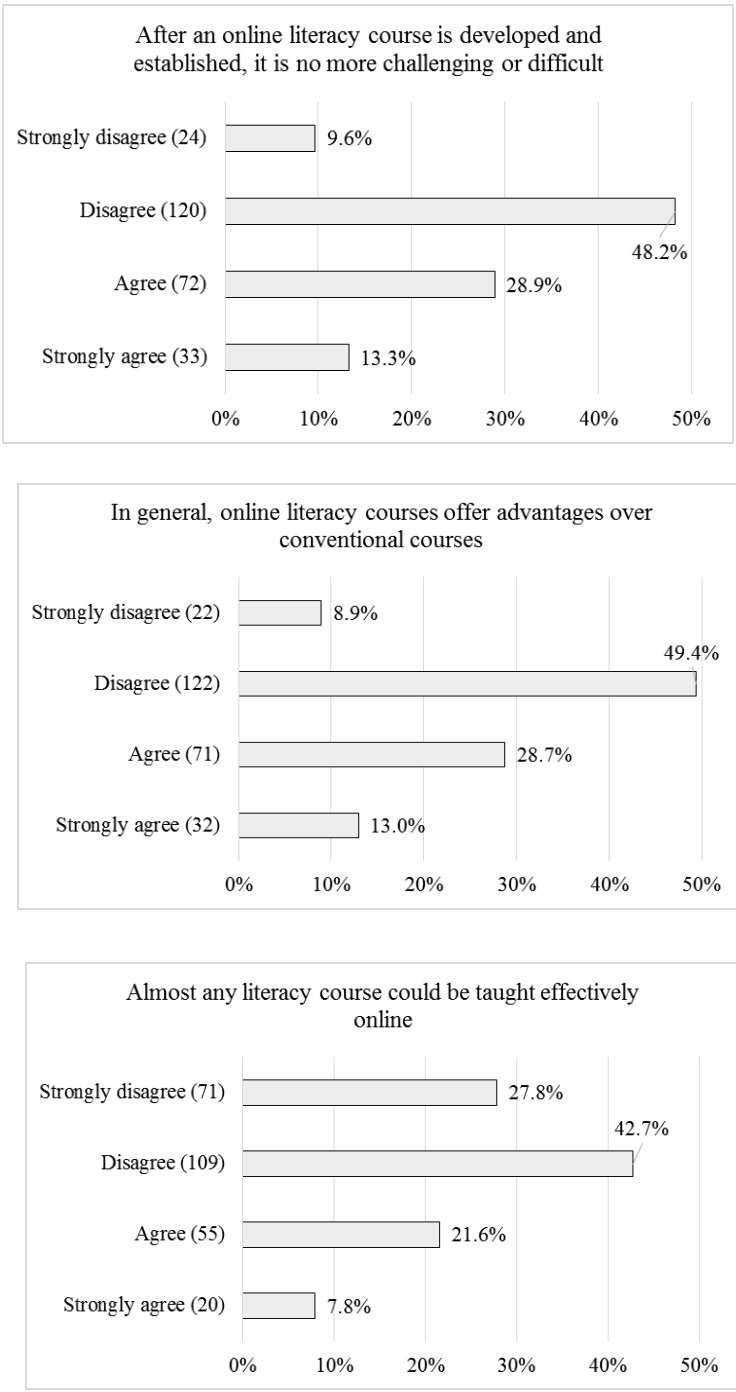


Figure 4.13. Literacy faculty's attitudes toward online literacy courses.

Figure 4.13 shows that respondents were most favorable to the item of "In the future, there is likely to be an increase in the number of literacy courses taught online.",

followed by “Online courses are a welcome expansion of the options for teaching literacy courses.”, and “If asked teach a literacy course online, I would enthusiastically agree”, whereas they were least favorable to the item of “almost any literacy courses could be taught effectively online.”, followed by “In general, online literacy courses offer advantages over conventional courses.”, and “After an online course is developed and established, it is no more challenging.”

Regression analyses were conducted to reveal the relations among the variables associated with higher levels of and positive attitudes toward online teaching and thus to shed light on what factors or influences may account for differences in use and attitude. Therefore, the two outcome variables were a) extent of teaching online courses and b) attitudes toward offering online literacy course.

Ordinal logistic regression, a special type of multiple regression modeling, was adopted to predict respondents’ extent of teaching online courses, because the outcome variable was an ordinal measurement rated on a four-point scale (never = 0, hardly ever = 1, occasionally = 2, and regularly = 3). Respondents’ attitudes toward offering online literacy courses were predicted using regular multiple regression modeling, because in that case, the outcome variable was a composite, continuous measurement ranging from 0 to 18 which was scored by summing the values of responses to the six items on the attitude scale (strongly disagree = 0, disagree =1, agree = 2, and strongly agree =3).

Most variables, which were reported previously in this chapter using descriptive, test statistics, and correlations, particularly in relation with the extent of online teaching, were entered into the both regression models as predictors, because existing literature

suggested that influence the extent of teaching online courses and/or attitudes toward offering such courses. For instance, perceived advantages in this study were consistent with the Technology Acceptance Model (TAM) (Davis, 1986; Davis, Bagozzi, & Warshaw, 1989). TAM is a popular theory about how users accept a new technology in the field of information systems and the construct of perceived usefulness in predicting technology acceptance in the TAM theory was similar to the perceived advantages in this study.

Other predictors such as faculty characteristics including age, gender, and technology competence were also supported in the literature although with somewhat less confidence because of their scope and rigor (e.g, Goral, 2000; Spotts, 1999; Peluchette & Rust, 2005). They were also included in the regression models in this study for the following reasons. First, there is a dearth of studies that investigate the factors that might contribute to faculty's online practices and their attitudes toward offering such courses. Second, due to little research, this study, in light of the scarce research can be considered exploratory. Third, this study included as many predictors as identified to be reasonable in the literature, because their relations can be investigated more precisely when the influence of other variables are ruled out (Field, 2009), meaning that the values of the regression coefficients in the model are determined in the relations with other predictors in the model.

The overall purpose of selecting predictors was to go beyond reporting the mere presence of simple, bivariate correlations among variables, which mainly informs us the strength of a relation between the two variables, but not the direction of that relation, and

about a third, confounding variable that are associated with both variables (Cunningham, Stannovich, Maul, 2011). However, researchers are cautioned not to include predictors in a regression model without supporting evidence in the hope of finding some statistically significant results (Field, 2009). Thus, predictors such as instructors' role and the extent of teaching literacy courses were not selected as predictors because of a lack of supporting evidence.

Table 4. 15 summarizes predictors initially entered into the regression models in this study. This table also shows how they were recoded and scored. Nominal variables such as academic status were dummy-coded in order to be interpreted in relation to a reference category, which is usually a baseline condition in comparing against other conditions. For example, in predicting the extent of online teaching with academic status, it is easier to select the lecturer or others category as a reference, baseline group in comparing it's influence on the extent of online teaching against other categories (distinguished or full, associated, and assistant) because their extent of teaching online was lowest. In accordance with Field (2009), a medium effect size was expected with a sample size of 250 to 270 with 5 to 30 predictors in the model. (p.223)

Table 4. 15

Predictors Selected for Regression Analyses

Predictors	Measurement	Coding/ Scoring
Demographic		
Gender	Dichotomous	

Age	Ordinal	less than 30s = 0, 40s =1, 50s = 2, 60s+ = 3
Teaching experience (Years)	Ordinal	5 or less = 0, 6-10 = 1, 11-15 = 2, 16-20 =3, 21 or more = 4
Teaching level	Dichotomous	
Academic rank	Nominal	
Technological skill	Ordinal	minimal = 0, moderate = 1, great = 2
<u>Academic unit</u>		
Required vs. voluntary	Dichotomous	
Source of motivation	Nominal	
Guidance and direction	Ordinal	not at all = 0, small = 1, moderate = 2, great = 3
Online literacy courses offered	Ordinal	not at all = 0, small = 1, moderate = 2, great = 3
<u>Institution level</u>		
Prevalence of online courses	Ordinal	less than a few = 0, many = 1, very many = 2
Technological Infrastructure	Ordinal	small = 0, moderate = 1, great = 2
Institutional support	Ordinal	small = 0, moderate = 1, great = 2
Institutional classification	Nominal	

Training	Dichotomous			
Incentive	Dichotomous			
Belief/ Practice				
Overall pedagogical orientation	Ordinal	very traditional = 0, traditional = 1, mix of traditional and constructive =2, constructive = 3, very constructive = 4		
Extent of teaching online courses*	Ordinal	never = 0, hardly ever = 1, occasionally = 2, and regularly = 3		
		Mean (SD)	Range	Cronbach Alpha
Perceived suitability (8)	Continuous	16.41 (4.50)	0 - 24	.76
Perceived advantages (10)	Continuous	11.54 (4.99)	1 - 20	.87
Perceived obstacles (10)	Continuous	19.11 (5.38)	0 - 30	.82
Attitudes toward offering online courses (6)*	Continuous	9.56 (3.63)	0 - 18	.81
Extent of technology use (12)	Continuous	20.61 (7.17)	0 - 36	.80

Note. *Outcome variables were entered into the model as a predictor when predicting the counterpart.

An ordinal logistic regression was conducted to predict respondents' extent of teaching online literacy courses. Following the guideline the literature suggested (Field, 2009, p.213), a backward method, beginning by placing all predictors in the model, then excluding predictors that were statistically redundant based on a removal test, was used. Then, the final model was established with seven predictors: age, academic rank, required vs voluntary, online literacy courses prevalence at their academic unit, perceived suitability, extent of using technological components, and attitudes.

The assumption of no multicollinearity was checked by looking at a correlation matrix of all of the predictors in the regression model. Ruling out multicollinearity is important because it may lead to three problems: untrustworthy of the regression coefficients (*b*s), limiting the size of a multiple correlation coefficient (*R*), and difficulty in assessing importance of predictors (Field, 2009, p.224). The highest correlation was between age and a dummy variable (distinguished or full professors in academic status): $r_s = .509$, n = 262, p < .00, indicating that multicollinearity was of little concern in the subsequent analysis. The assumption of proportional odds means that each predictor has an identical effect at each cumulative split of the ordinal outcome variable. That assumption is a key rationale for ordinal regression analysis, so if it is not met, the logic is flawed. The test of parallel lines showed the final model did not violate the proportional odds assumption: $\chi^2 = 7.401$, df = 18, $p = .986$.

The final model significantly predicted respondents' extent of teaching online courses: $\chi^2 = 152.577$, df = 9, $p < .01$. The Pearson goodness-of-fit test indicated that the data were consistent with the fitted model: $\chi^2 = 726.738$, df = 720, $p = .42$. The pseudo R^2

(*Nagelkerke*) indicated that this model explained 50.4 % of the odds variation among respondents in predicting the extent of teaching online courses. The results were detailed in table 4.16.

Table 4. 16

Results of Ordinal Logistic Regression Analysis Predicting Extent of Online Teaching

Predictors	B	S.E.	Odds Ratio
Age	-0.36*	0.17	0.70
Academic Status			
Full or Distinguished	1.25	0.67	3.50
Associate	1.45*	0.63	4.25
Assistant	0.65	0.64	1.92
Lecturer or others (reference)			
Required vs voluntary			
Voluntary	-1.40**	0.54	0.25
Required (reference)			
Online literacy courses prevalence	1.17**	0.19	3.23
Perceived suitability	0.10*	0.04	1.11
Extent of technology use	0.06**	0.02	1.06
Attitudes	0.17**	0.45	1.19

** $p < .01$, * $p < .05$

The influence of age on extent of online teaching was significant (Wald = 4.57, df = 1, $p < .05$). The coefficient was negative, indicating that older respondents were more likely associated with decreased odds of teaching online courses. Associate professors were more likely teaching online courses at a statistically significant level, specifically 4.25 times greater than lecturers, adjunct, and others. Respondents were also likely associated with a greater extent of teaching online courses, when they were required to teach online, when they were required to teach online, 4 times more than when voluntary. The extent to which online literacy courses were prevalent at their academic units, the extent of perceived suitability, the extent of technology use, and attitude were also the significant predictors.

A conventional multiple regression analysis was conducted to predict respondents' attitudes toward offering online courses. Again, using backward method, the final model was established with five predictors: technological skill, perceived advantage, perceived obstacles, perceived suitability, and the extent of teaching online courses. All the assumptions including normality, linearity, multicollinearity, homoscedasticity, independent error were checked following the guidelines from the literature (Field, 2009). No assumptions were violated. For example, Durbin-Watson test was conducted to check the assumption of independent errors. The value of the test statistic was 2.02, indicating that the residuals of this model were relatively uncorrelated. Values less than 1 or greater than 3 of this test is a source of concern (Field, 2009).

The final model significantly predicted respondents' attitudes toward offering online literacy courses: F (5, 264) = 59.55, $p < .01$. The final model predicted 53.0 % of

the variance in their attitudes toward offering online courses (R^2 = .53, adjusted R^2 = .52). The coefficients and the correlations for the predictors were summarized in Table 4.17.

Table 4. 17

Results of the Regression Analysis Predicting Attitude toward Offering Online Courses

Predictors	B	S.E.	Sig.	Zero-order *r*	Partial *r*
Technological skill	0.71**	0.26	.006	.27	.17
Perceived suitability	0.12**	0.04	.003	.49	.18
Perceived advantages	0.37**	0.04	.000	.67	.53
Perceived obstacles	-0.6**	0.03	.026	-15	-.14
Extent of teaching online courses	0.42**	0.14	.002	.45	.19

** $p < .01$

All the influences of the predictors on respondents' attitude toward offering online courses were significant. The coefficient for perceived obstacles was negative, indicating that when respondents perceived obstacles more seriously, their attitudes toward offering online literacy courses were less favorable. When literacy faculty perceived the more advantages, and the more suitability, the more their attitudes were favorable. Further, the more they were teaching online, the more their attitudes were favorable.

Partial correlations indicated that the perceived advantage was the strongest in predicting their attitude (r = .53). When the influence of the perceived advantage was ruled out, the correlation between their attitudes and the perceived suitability was reduced

from .48 to .18. The same thing occurred to the extent of teaching online courses. The correlation was reduced from .45 to .19. These results suggested that the perceived advantage had much influence on the relations between the two predictors and their attitudes toward offering online courses. Figure 4.14 summarized the relations between the predictors and the two outcome variables from the regression analyses.

Chapter Summary

In this chapter, the results of data analyses in response to the research questions of the present study were reported. The results from descriptive analysis, test statistics, correlation, and multiple regression analyses were presented. Key findings from the results and implications related to literacy teacher education are discussed in the next chapter.

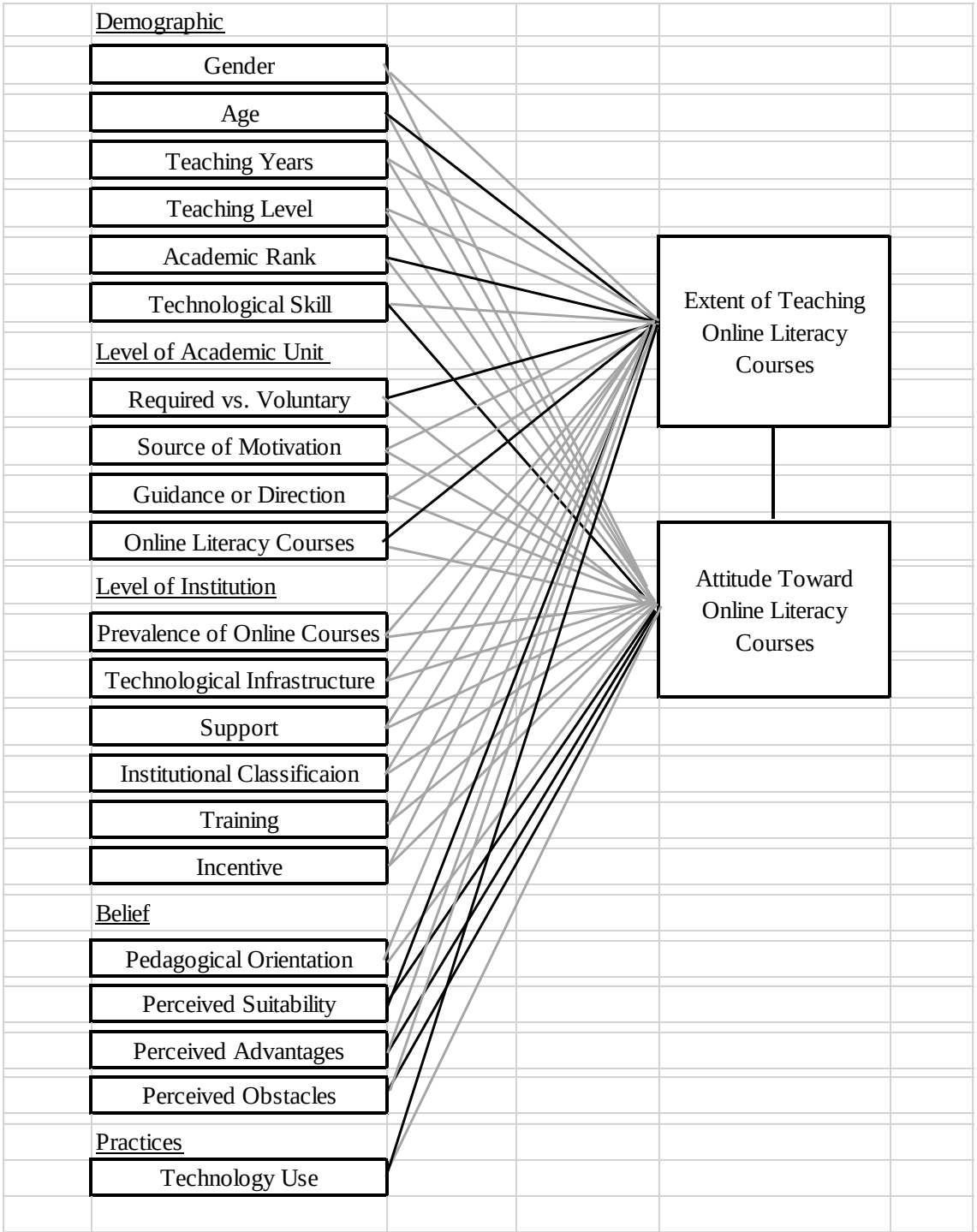


Figure 4.14. Relations between the predictors and the two outcome variables

CHAPTER FIVE

DISCUSSION

In this chapter, I provide an overview of findings, which serves as a portrait of online teaching of literacy courses. Then, I discuss how the study's findings connect to and extend the literature, what questions and issues do the findings begin to resolve, what questions they raise and what future research is needed. I also discuss the limitations and caveats of this study. I conclude with the implications and recommendations for practices in literacy education.

A Portrait of Online Teaching of Literacy Courses

Literacy faculty members in this study reported teaching more online courses than faculty in other disciplines and subject areas. The extent of literacy faculty members' online teaching did not vary substantially by their gender, age, teaching experience, and academic rank. However, their extent of online teaching was somewhat different by their teaching level, and notably different in relation to their technology skills. Possible explanations for the differences will be discussed in the next section.

When the motivation to teach online at the academic unit level originated from literacy faculty themselves, the extent of online teaching was considerably greater than when motivation was attributed to administrators. Likewise, the extent of teaching online literacy courses was notably greater, as expected, when literacy faculty reported being required to do so. However, the guidance or direction their academic units provided to literacy faculty was not significantly related to the extent of online teaching. Further,

there is no identifiable trend in the extent of literacy faculty's online teaching associated with the classification of their institution as undergraduate and masters, low research activity, high research activity, and very high research activity. At the institutional level, the differences in the extent of teaching online literacy courses by technological infrastructure and institutional support were not statistically significant. The availability of training and incentives was not significantly related to the extent of online teaching as well.

In terms of how technological tools and activities used in online literacy courses, delayed discussion, real time discussion, online quizzes, LMS, video, podcasts, visual posters, and Blogging were significantly related to the extent of online teaching, whereas social networking, web searching, collaborative writing, and presentation tools were not.

Examining whether there were relations between their pedagogical approaches and the extent of teaching online courses, interestingly, the more literacy faculty members were teaching online, the more they characterized themselves as an organizer. Literacy faculty's overall orientation toward constructivist pedagogy was not significantly correlated with the extent of teaching online courses.

Every identified advantage of offering and teaching online courses across all the options on the survey item was significantly correlated with the extent of online teaching. The more literacy faculty members were teaching online, the more they perceived every advantage as relevant. However, not every perceived obstacle was significantly correlated with the extent of online teaching. For example, availability of high-quality online

materials and time and resources for development were significantly correlated, whereas student and faculty technology skills were not.

Regression analysis indicated that age, academic rank, and use of technology, among faculty characteristics, significantly accounted for greater extent of teaching online courses. Whether online teaching was required or not, the prevalence of online literacy courses, the perceived suitability of course components were all also significant predictors of extent of teaching online courses. The odds of offering and teaching online literacy courses were also higher if their attitudes toward online teaching were more favorable.

In the present study, literacy faculty's attitudes toward online courses in general were somewhat negative. Multiple regression analysis indicated that technological skills, perceived suitability, perceived advantages, perceived obstacles, and the extent of online teaching significantly accounted for the variance in the attitudes toward online literacy courses.

Discussion of Findings

This section addresses such questions as: How do the study's findings connect to and extend the literature? What questions and issues do the findings begin to resolve? What questions do they raise? What future research is needed?

Extent of Teaching Online Literacy Courses

A recent national survey reported that a minority of faculty members in higher education (26.8%) have taught at least one online course in 2013 (Gallup, 2013). Seaman (2009) also reported more than one third (34.4%) have taught online. Further, Allen and

Seaman (2008) reported little disciplinary differences in the rate of online offerings. Nonetheless, 49.2% of the literacy faculty surveyed in this study reported having taught at least one online course and 59.5% reported having taught a hybrid literacy course.

Disciplinary differences in the extent of online offerings in the area of literacy might explain this greater involvement in online teaching. Shea, Pickett, and Li (2005) asserted that disciplinary area was significantly associated with faculty's likelihood to adopt online teaching. Several reasons have been offered to explain why an increasing number of courses are drawn into online environments in the field of education in general and thus perhaps specifically in the area of literacy programs and courses. In the field of education, there is a great need to increase the numbers of graduates (Olson & Werhan, 2005). Further, there are more adult learners who may find online course work attractive because of the demands of their work schedules. For example, Ansha, Neill and Newton (2011) claimed that faculty of education and nursing were more interested in online education than other disciplines because they attract older adult learners.

Specifically, a variety of literacy programs are designed online for in-service teachers who are seeking a degree toward specialized positions such as reading specialists. That is, online programs may be attractive to practicing literacy teachers to seek professional development while they accommodate the demands of teaching fulltime. Yet, there is no direct evidence to substantiate these explanation of why the extent of online offerings in the field of literacy education is considerably greater than other disciplines. Seeking such evidence may be the focus of future research.

Further research for interdisciplinary comparisons with regard to the extent of online offerings is needed to help us better understand the dynamic of literacy faculty's development and teaching of online courses. Those comparisons may lead us to better support literacy teacher educators who may be more in need of assistance for designing and teaching online courses. For example, literacy teacher educators may more likely be practicing teachers who find online courses more doable and accommodating, particularly with their busy schedules and many obligations. Institutions may provide them with more differentiated resources, guidance, direction, support, training, and professional development for teaching in online environments.

Faculty Characteristics

The insignificant influence of gender on the extent of literacy faculty' online teaching was not consistent with Kim and Bonk (2006), Allen and Seaman (2009), and Mandernach, Register, and O'Donnell (2015). These studies found that female instructors were more often teaching online courses than their male counterparts. However, direct comparisons were of limited value and can be misleading due to differing sampling methods and target populations. Kim and Bonk (2006) targeted general college instructors enrolled in two national professional organizations. Mandernach, Register, and O'Donnell (2015) targeted adjunct faculty members at two universities. Rather, the insignificant influence of gender on the extent of literacy faculty' online teaching may be explained, in part, as an extension of previous research indicating that gender is not related to the use of technology in courses at institutions of higher education (McKinley, 2011).

In traditional environments, gender was a factor influencing student perceptions of instructors' effectiveness, student satisfaction, choice, preference, and evaluation of instructors (Basow, 2000; Bianchini, Lissoni, & Pezzoni, 2013; Freeman, 1994; Sprinkle, 2009). The present study did not intend to explore the relation between faculty gender and such factors Further research on how faculty characteristics such as gender and age might play a different role in an online teaching would be interesting and useful. In this regard, Madernach, Register, and O'Donnell (2015) suggested,

> Faculty development initiatives can train faculty in asynchronous interaction strategies that display preferred faculty characteristics. For example, faculty can be provided guidance on effective ways of conveying emotions (i.e., empathy, care, warmth) within the context of an asynchronous discussion which lacks traditional non-verbal indicators of expressiveness (p.4).

In some studies, age has been found to be a significant factor related to the extent of technology use in general (Czaja et al, 2006), in classrooms in higher education (Gueldenzoph, Guidera, Whipple, Mertler, & Dutton, 1999), and in their attitudes toward technologies (Elsaadani, 2013). Contrary to those findings, Cushing, Lindenfeld, Morote, Kelly and Rudiger (2010) showed that age was not influencing the degree to which faculty used technology for instructional purposes. They found that educators older than 55 used technology more frequently than educators between 40 and 55 years old.

Contrary to expectations that younger instructors may use more technology and also teach more online courses, the present study revealed that age was not related to the extent of teaching online literacy courses. That result was consistent with Allen and

Seaman (2009). Considering the generational differences in learning style (Rosen, 2010), the wide age range of online faculty may necessitate differential types of faculty development for online teaching (Madernach, Register, & O'Donnell, 2015). Interestingly, novice literary faculty members who had 0 to 5 years teaching experience in higher education represented the smallest online teaching group, although the differences in the extent of online teaching among respondents with different levels of teaching experience groups were not statistically significant. That finding was consistent with Allen and Seaman (2009).

However, FTI consulting (2015) found that faculty with less teaching experience were more inclined toward training activities than those with more teaching experience. Interestingly, training for online teaching was not a significant factor influencing online student satisfaction, but online teaching experience (faculty longevity) seemed to have a significant influence on online student satisfaction (Kane, Shaw, Pang, Salley, & Snider, 2015). Those results suggested that administrators and those assigned to help faculty develop online courses must pay particular attention to faculty members with little teaching experience in both conventional and online environments.

There have been claims that universities and colleges are relying heavily on adjunct faculty to meet online teaching need (Mandernach, Register, & O'Donell, 2015). Shelton and Saltsman (2006) insisted that this phenomenon created a dilemma necessitating that universities and colleges hire more adjuncts faculty to meet the online teaching need. Nonetheless, the overuse of adjunct faculty may lower the academic quality of content and instruction. However, the findings of the present study suggest that

this concern is unwarranted in literacy programs. That is, the differences in the extent of online teaching among different academic rank groups were not statistically significant. In fact, literacy faulty at the rank of assistant, associate, full or distinguished professors were teaching online courses more frequently than lecturers or instructors, and adjuncts. The overreliance on adjunct faculty for online teaching may no longer be a justifiable generalization, or may occur only in a few specific schools or programs (Allen & Seaman, 2009). Allen and Seaman (2005) also supported this possible interpretation, revealing that a majority of institutions were primarily using their core faculty to teach online courses rather than adjunct faculty. More detailed research is needed to clarify this issue perhaps tracking trends of over time.

In the present study, considerably more literacy faculty members (67.8 %) were teaching mostly at the graduate level than at the undergraduate level (31.9 %). This result may be explained by the prevalence of graduate teacher-education programs in the field of literacy education. Many are designed for prospective and practicing teachers seeking a degree. For example, many states still require a master's degree for professional development or the renewal of a teaching certificate. Many graduate programs are also designed for other professions such as reading specialists.

The difference in extent of online teaching by teaching level may also be explained by the distinctive characteristics of graduate programs in higher education. In general, graduate programs are more specialized, with smaller classes, which might be economically ineffective if delivered in a face-to-face format. Graduate programs may have more adult learners, who want to accommodate their working schedule with the

flexibility that online courses provide. Further research is necessary to investigate what type of literacy courses are offered online specifically at the graduate level, what type of students are being involved, and the extent to which online or face-to-face formats are more or less preferred for certain types of courses and students.

Most literacy faculty members in this study (90%) perceived themselves as being relatively well skilled and knowledgeable in regard to using digital technology in their teaching. One third (33.0%) reported perceiving themselves as greatly skilled and knowledgeable, and 57.0% as moderately skilled and knowledgeable. This result was consistent with Dahlstorm and Brooks (2014)'s finding that faculty members in higher education reported a higher level of technology use, positive attitudes, and positive dispositions toward technology integration in their teaching.

Contrary to respondents' positive dispositions and attitudes toward technology integration, Gallup (2013) found that there was skepticism about online education among faculty members (Allen & Seaman, 2015). Given that the extent of online teaching was strongly associated with their attitudes toward online teaching, which is detailed in the next section, future research might investigate what factors might hamper their positive dispositions and attitudes toward technology integration to be extended to online teaching.

Circumstances

The present data indicated that motivation for developing and teaching online literacy courses was most often stimulated by administrators (48.9%) rather than by the faculty themselves (33.3%) or by the needs of students (5.9%). The proportion of literacy

faculty members whose motivation for developing and teaching online courses was triggered by students was notably smaller. In this study, with regard to online teaching, literacy faculty members were somewhat more motivated by their administrators than by faculty themselves. Yet, notably, the present data also indicated that the extent of online teaching was considerably greater when the motivation originated from faculty themselves than from administrators.

These results may suggest that faculty development coordinators for online teaching, at least in the area of literacy, must consider where the faculty motivation to teach online courses resides. In this regard, previous studies shed light on this issue. Allen and Seaman (2008) reported that there was much agreement between administrators and faculty with regard to the motivation to teach online courses. According to Allen and Seaman (2008), the flexibility in meeting the needs of students was the highest rated motivation for teaching online, whereas being required to teach online was the lowest rated motivation by both administrators and faculty. One notable difference was that faculty rated the importance of additional income considerably lower than administrators (Allen & Seaman, 2009). Dahlstrom and Brooks (2014) reported that the primary motivation for faculty to integrate technologies into their instruction, although not directly related to online teaching, was enhancing student learning, rather than compensation or tenure decisions.

However, what most triggers faculty to teach online may be more related to pedagogical benefits and less about recognition for tenure or promotion, financial benefits or incentives. That clarification might explain why the extent of literacy faculty's

online teaching, in this study, was not significantly different across various incentives, which is detailed below. However, that does not necessarily mean that those compensations for online teaching are irrelevant. In fact, administrative efforts to promote online teaching might be enhanced by ensuring fair compensation.

Only 10.7 % of literacy faculty members in this study reported online teaching was required in their academic units. The difference in the extent of online teaching in relation to the variable required vs. voluntary teaching was statistically significant. The extent of teaching online literacy courses was notably greater, as expected, when literacy faculty reported being required to do so.

In regard to voluntariness, Gallup (2013) may serve as a point of comparison. When asked about the main reason for not teaching online courses, 30% of faculty members in that study reported that it was because they have never been asked (Gallup, 2013). Yet, mandating online teaching may yield cursory involvement with teaching online if faculty are not fully committed to doing so. Previous research may shed light on that issue. Voluntariness has been researched as a factor related with individuals' technology acceptance, yielding contradictory findings (Vehring, Riemer, & Stefan, 2011). Vehring, Riemer, and Stefan (2011) argued that voluntariness is necessary for technology implementation and roll-out, but that it may act as an inhibitor to full diffusion. Being required to teach online was the lowest rated motivation by faculty members (Allen & Seaman, 2008), as previously detailed. Gudea (2008) claimed that faculty participation in online teaching should not be mandated if institutions offer online education as an alternative, because it requires considerable time to adjust to the demands

of online teaching. Thus, deciding whether or not to mandate online teaching may be a difficult decision for administrators. Further research would be helpful for the administrators to understand unique reasons as to why literacy faculty do not teach online courses, problems that may emerge if online teaching is mandated, and alternative ways of encouraging online teaching.

Most literacy faculty members in this study reported their academic units provided guidance and direction for developing and teaching online courses to some degree. Palloff and Pratt (2011) claimed that instructors receive little or no guidance for online teaching and that they are left to fend for themselves in online teaching. That claim was unwarranted in the literacy programs of the faculty sampled in this study. Yet, there is little research on how guidance and direction is to be provided as an effective means by which a literacy faculty can begin teaching online and avoid any confusion that may occur as they acclimate to online teaching.

In the present study, the extent of online teaching was not significantly related to the extent of guidance or direction provided to faculty. The reason was not clear, especially in light of previous research suggesting the need for more relevant guidance for developing effective teaching practices in online environments (Sellani & Harrington, 2002). More focused research may be needed to explore the relation between the availability of guidance and direction and faculty's engagement with online teaching.

Institutional Characteristics

Institutional classification in the study ranged from undergraduate or masters to very high research institutions. The data analysis indicated that there is no unique trend in

the extent of literacy teachers' online teaching based on institutional classification. For example, 30.8% of literacy faculty at undergraduate or masters were regularly teaching online courses, whereas 32.4% at low research, 34.1% at high research, 36.7% at very high research were regularly teaching online courses. Any comparison with previous research was difficult due to differing definitions of online offerings and institutions. However, a recent study found that institutional differences in Carnegie classifications were associated with training content and activities for faculty development for online teaching. Meyer and Murrell (2014) found that research/doctoral institutions were especially focusing more on the pedagogy of online teaching than the tools for delivering it. Further, research/doctoral institutions, with greater resources, offer more personnel-intensive activities for training of online education (Meyer & Murrell, 2014). Thus, how and whether training at institutions with different Carnegie classifications mediates the relation between the type of training and the extent of online teaching may await further exploration.

The present data indicated that 28.9 % of institutions with which literacy faculty members were affiliated offered few online courses or programs, whereas 50% of institutions offered many online courses and 13.3% of institutions offered very many online courses. Any comparison with previous research was difficult due to differing methods of measuring the extent of online offerings. For example, Dahlstrom, and Brooks (2014) reported that more than 80% of institutions offered at least several online courses and more than 50% offered a significant number of online courses. A direct comparison was not warranted, because it was difficult to determine what a significant

number meant in their survey. How and whether literacy programs were in conformity with the institutional trend with regard to online offerings may await further exploration. Specifically, further research may need to examine unique trends in offering literacy programs online and to what extent online formats are preferred for certain types of literacy courses.

Most of literacy faculty members, in this study, reported a great or moderate extent of technological infrastructure for developing or teaching online courses at their institutions. Only 14.3% reported limited technological infrastructure. This result was consistent with Allen and Seaman (2009), in which technological infrastructure was the area with the highest ranking of faculty satisfaction among other institutional supports. The differences in the extent of teaching online literacy courses by the extent of technological infrastructure were not statistically significant. Zawacki-Richter, and Anderson (2014) adverted to the need that other institutional supports besides technology, including rewards and recognition must be considered more importantly, although technological infrastructure and technical support has been a focus of attention at the institutional level. Although the role of technological infrastructure in relation to teaching online courses was not perceived by faculty to be particularly important, technological structure may affect the other aspects of online education such as faculty or student satisfaction about online courses (Allen & Seaman, 2009). This, too, is an area that warrants further investigation.

Institutional support for planning, developing and teaching online courses may include explicit policies related to online teaching and learning, technical support for

online delivery and teaching, and/or recognition for tenure or promotion at the institutional level. Most of literacy faculty members in this study (71.3%) reported a great or moderate extent of institutional support. The differences in the extent of teaching online literacy courses in relation to the extent of institutional support were not statistically significant. However, institutional support may indirectly influence the extent of online teaching. Allen and Seaman (2009) reported that the time or additional effort required to develop or teach online course was faculty's greatest concern, which is detailed in the subsequent section. They also reported that faculty, with regard to the time and additional effort required for teaching online courses, focused more on institutional support issues than external issues such as potential employers' recognition of online degree. Thus, determining how and whether the concern about the time and additional effort influence the extent of online teaching and whether any influence is mediated by institutional support, awaits further exploration.

Only 9.4 % of literacy faculty members in this study reported that their institutions had no training available for their online teaching. That finding aligns closely with Allen and Seaman (2011) who reported only six percent of institutions with no training. However, in the present study, the difference in the extent of teaching online literacy courses was not related at statistically significant levels to the availability of training. One explanation for this insignificant difference is that the relation may be mediated by a third variable such as faculty satisfaction (Bolliger & Wasilik, 2009), which was not a variable included in this study. Investigating such mediating variables would require a more sophisticated research design and data analyses.

The demand for faculty training or professional development for online teaching is likely to be important, because online teaching entails fundamental challenges such as the shift in the role of instructors posed by online environment (Clarke & Watts-Taffe, 2013). A considerable investment of time and effort is needed to address these challenges (Bates & Poole, 2003; Major, 2010). Which aims, content, activities, formats of training drive faculty members to become better instructors in online environments need to be investigated.

The institutional incentives for developing and teaching online courses have been reported as unsatisfactory among faculty members. For example, Gallup (2013) reported that only 12% of faculty strongly agreed that online instruction is fairly compensated. In the present study, about 40% of literacy faculty members reported institutional incentives for developing or teaching online courses. This result might be somewhat more than expected from Gallup (2013), but the result did not indicate how satisfied literacy faculty were with this level of compensation. Also, this study reported that the most common incentives were monetary. Yet, this study did not reveal the extent to which literacy faculty members thought monetary incentives were appropriate and fair.

In the present study, the difference in the extent of teaching online literacy courses in relation to the availability of incentives was not statistically significant. However, like technological infrastructure, institutional support, and training, one explanation for this insignificant difference is that the relation may be mediated by faculty satisfaction (Bolliger & Wasilik, 2009). Seaman's (2009) work supports that

explanation, because she reported inadequate compensation as a barrier to teaching more online courses, which might influence faculty satisfaction.

Technology Use

The profile of literacy faculty's technology use revealed patterns mostly convergent with the profiles of previous surveys about technology use in higher education (Allen, Seaman, Lederman, & Jaschik, 2012; FTI consulting, 2013). For example, most literacy faculty members were employing presentation tools (92.0%) and video (90.5%) occasionally or frequently in this study. That is comparable to Allen, Seaman, Lederman, and Jaschik (2012)'s profile in which most faculty (79% to 91%) reported using video in course presentation as part of their teaching occasionally or regularly. Likewise, FTI consulting's (2013) profile in which 32% of faculty members tried or adopted social media was comparable to the present study, in which 28.1% of literacy faculty employed social networking occasionally or frequently in their teaching.

However, the adoption rate of various technologies remained decidedly uneven (i.e., 71.4% employed presentation tools frequently, whereas 17.1% employed blogging frequently). Given more frequent use of some technologies in literacy courses (i.e., LMS, presentation tools, video, delayed discussion, and web searching), faculty development coordinators need to consider how effectively they support instructional use of such technologies particularly for enhancing literacy education. Given that less-frequent use of other technologies in literacy faculty's instruction (i.e., social networking, visual poster, online quizzes, podcasts, and blogging), administrators and those assigned to help faculty develop online courses may need to consider how to help literacy teacher educators who

do not use such tools in their instruction. However, it is not clear from the present survey why they do not use such tools. Questions such as whether they lack familiarity with such tools or are for some reason reluctant to use them need to be investigated

For example, literacy instructors may be reluctant to integrate social networking such as Facebook or Twitter into their instruction because they know some of their students, who are prospective or in-service teachers, do not see social networking as a classroom tool and because it co-mingles aspects of their personal and academic lives (Dahlstrom & Brooks, 2014). If so, instructors may need to be informed about the importance of educating pre-service teachers by modeling uses of technology that promote literacy required in modern society (Hutchison & Wang, 2012). Instructors may also need to receive technical support in creating separate accounts on social media that serve academic, as opposed to personal purposes.

The present data suggest that a clear majority of literacy faculty identify their instructional stance as having a constructivist orientation of instruction. Almost 60% of literacy faculty members identified their overall orientation of instruction somewhat or highly constructivist on a continuum between traditional and constructivist pedagogical approaches. This finding is interesting and relevant aside from any consideration of online teaching. Further, given that literacy faculty members were considerably more oriented toward constructivist pedagogy, administrators and those assigned to help faculty develop online courses may need to put more emphasis on technology use for the application of constructivist principles to learning (Gilakjani, Lai-Mei, & Ismail, 2013). For example, faculty may have students create a blog to record their learning and thinking

in an online literacy course (Clarke & Watts-Taffe, 2013). Many literacy faculty members in this study also characterized their role as a facilitator (77.3%), a role model (58.9%), and an organizer (58.7%) to a great extent. This result is arguably aligned with the claim that constructivist teachers perform the role of a guide, mentor, or facilitator while encouraging students to construct knowledge by questioning their thinking and learning strategies (Keengwe, Onchwari, & Agamba, 2014).

Understanding literacy teachers' pedagogies on a continuum between two broad, somewhat contradictory orientations (traditional and constructivist) aimed to provide insights into teaching, particularly in relation with technology use in the classroom. In the present study, notably, there were multiple connections across technologies. Correlation evidence suggested that the extent to which literacy faculty use collaborative writing, real time discussion, podcasts, blogging, social networking, and web searching is significantly and positively related to the overall orientation toward constructivist pedagogy. The relations between the extent of using online quizzes and presentation tools and the overall orientation were negative at a statistically significant level. No significant relations were established with visual poster, delayed discussion, LMS, and video. Overall, these findings bolster Cadiero-Kaplan's (1999) claim that the differences between traditional and constructivist classrooms are clear in the roles of teachers, students, and curriculum, and these differences specifically impact technology uses in the classroom.

These results also suggest that the type of technologies integrated into literacy teaching may be meditated by instructors' pedagogical orientation. For example, the main purpose of using online quizzes and presentation tools in teaching is arguably to convey

knowledge from instructors to students, which is aligned with traditional orientation. Not surprisingly the correlations between those tools and respondents' orientation toward constructivist pedagogy, in this study, were negative. LMS and video is used frequently in literacy instruction regardless of instructors' pedagogical orientation. Some might be a good fit with constructivist orientation, whereas others may find it a good fit with traditional instruction.

When considering students' preference of learning tools in the classroom (Dahlstrom & Brooks, 2014), the dynamic of relations among an instructor's pedagogy, the type of technology, and student learning style might be too complicated to reveal clear or unique patterns. It has been argued that literacy teacher educators should use technology to serve these complex interactions (Amiel & Reeves, 2008). These complicated relations may justify more differentiated approaches in faculty development for technology integration. For example, an instructional designer may be paired with a faculty member and provided support and advice that is tailored to the faculty's needs and/or orientation (Blick, Dagnon, Burgess, Brown, & Miller, 2014).

Correlational evidence in this study portrayed a complex pattern in literacy faculty's technology use in relation with their perceived role as an instructor. For example, the role of matchmaker was positively, significantly correlated with many technologies: a) social networking, b) web searching, c) collaborative writing, d) real time discussion, e) blogging, f) podcasts, and g) social networking, whereas the role of counselor was positively, significantly correlated only with social networking (see Table 4.3).

Thus, instructors' perception of their role may be related to their beliefs, which may influence technology practices in their classroom (Etmer, 2005; Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur, & Sendurur, 2012; Kim, Kim, Lee, Spector, & DeMeeester, 2013). It may be the case that an instructor's perceived role affects, or possibly effects, the use of technology selected. It is still not clear why use of certain technologies is related to their perceptions about their role as an instructor. How a certain technology could contribute to or hinder faculty's playing a specific role as an instructor requires further research. For example, collaborative writing might conflict with the role of content provider. Prior to incorporating technology into teaching and learning, literacy faculty may need to be encouraged to consider pedagogical options including their perceived role as an instructor (Hutchison & Woodward, 2014).

Literacy faculty's overall orientation toward constructivist pedagogy was not significantly correlated with the extent of teaching online literacy courses, suggesting that other factors figure more prominently in extent of use. This lack of correlational evidence does not support Major's (2010) claim that a constructivist approach is a natural fit with online teaching and learning. However, this correlational evidence did not explore an individual's possible changes in technology use or orientation over time. Further research is required to determine if literacy faculty's overall orientation is affected by or effects changes over time based on their online teaching experience.

Interestingly, the extent of teaching online literacy courses was significantly correlated only with the extent to which literacy faculty members perceived their instructors' role as an organizer. The strength of that correlation was relatively weak (r_s

=.17), but the more literacy faculty members were teaching online, the more they characterized themselves as an organizer. The role of an organizer, according to Liu et al, (2005), is a type of managerial role relative to overall course structure including assignments and discussions. The data from this survey support the position of previous studies that the role of an organizer is important in online teaching, because a well-structured course may improve the quality of online learning (Liu et al, 2005).

However, the mere existence of that correlation may not support the claim that an instructor's role changes substantively in online environment, particularly with a constructivist approach (Major, 2010). Further, faculty in earlier stages of online teaching may encounter more managerial issues (Liu et al., 2005). Thus, the stability of this relation over time remains unknown.

Delayed discussion, real time discussion, online quizzes, LMS, video, podcasts, visual posters, and Bloging were significantly related to the extent of online teaching. However, the view that most technologies are used more frequently in online teaching than face-to-face was not consistent with social networking, web searching, collaborative writing, and presentation tools. For example, the correlation between use of delayed discussion and the extent of teaching online literacy courses was notably stronger (r_s =.51) than others. Delayed discussion was not correlated with literacy faculty's overall orientation toward a constructivist pedagogy, nor to any of the instructional roles the respondents identified. This lack of correlational evidence suggests that what drives literacy faculty's use of delayed discussion in online teaching is more related to an online delivery format rather than pedagogy. Qualitative approaches to data collection, such as

personal interviews, may help clarify reasons for literacy faculty's preference for delayed discussion in online teaching. More focused research is required to understand the dynamic of relations among literacy faculty's technology use, their pedagogy, and their online teaching practices.

Perceived Advantages and Obstacles

Literacy faculty responding to the survey identified increased access to more courses by more students as the most advantageous aspect of online courses. The greater opportunities for using digital media and making use of social media to students were the second- and the third-most-identified advantages. Enhanced pedagogical options, enhanced student learning regarding literacy, enhanced discussion, and enhanced institutional income were also identified, but less often. The least frequently identified was the benefit of greater interactions with and among students. Other potential advantages such as opportunities for informal and networked learning were also reported in response to an open-ended question.

Similarly, Allen and Seaman (2008) reported that faculty rated flexible student access as the most important motivation for teaching online. Many studies identified the greater opportunity for using digital technology as an important motivation or advantage grades (Allen, Seaman, Lederman, & Jaschik, 2012). It is not clear in the present study why literacy faculty rated use of social media as the third most justifiable advantage, which is discussed in relation to other perceptions in the next section. Most literacy faculty somewhat agreed that enhanced pedagogical options, enhanced student learning regarding literacy, and enhanced discussion were justifiable advantages of online

teaching. These advantages may be related to a literacy faculty member's orientation to pedagogy. Li and Akins (2004) argued that sound pedagogical considerations should be a priority when we think about online teaching and learning. Administrators and those assigned to help faculty develop online courses might consider ways to reinforce the positive perceptions of these advantages. For example, a positive experience in online literacy instruction may be supported by encouraging faculty to build online learning communities that have the potential to enhance students' learning regarding literacy (Clarke & Watts-Taffe, 2013).

It is not clear why literacy faculty perceived the advantage of enhanced interaction as least justifiable. Researchers argue that online teaching and learning improve the amount of and the quality of interactions, but the responses to present survey are not consistent with that argument. Online students typically have greater opportunities to interact with their instructor and peers than in traditional environments (Palloff & Pratt, 1999; Schrum & Berge, 1997). A more detailed study will be needed to address how literacy faculty member's perception about the advantage of enhanced interaction does not conform more closely to findings from previous studies.

Time and resources required for developing online courses was reported as the most common obstacle. Specifically, 92.5% of literacy faculty members reported time and resources as an obstacle to a great or moderate extent. Consistently, academic leaders or administrators have reported that faculty time or additional effort required for developing and teaching online courses is a major barrier to the growth of online education (Allen & Seaman, 2015). The level of that concern remained at the highest

level (76.3% reporting very important or important in 2008 and 78.0% in 2014). Allen and Seaman (2015) also found that any institutional support such as technical support have not mitigated that problem. Data from the present study adds impetus to these conclusions from previous research.

Faculty biases against online courses have been a major concern at least since 2002 (Allen & Seaman, 2015). Only, 27.6% of academic leaders or administrators has reported that their faculty accepted the value and legitimacy of online education in 2014 (Allen & Seaman, 2015). In the present study, 85.5% of literacy faculty members reported faculty biases against online teaching is an obstacle to a great or moderate extent. This result is surprising because faculty are increasingly embracing a variety of digital technologies (Allen, Seaman, Lederman, & Jaschik, 2012) and they have relatively positive attitudes and dispositions toward technology (Dahlstrom & Brooks, 2014). Although faculty are increasing embracing online teaching (Allen & Seaman, 2014; Dahlstrom & Brooks, 2014), their biases against online teaching has not faded. Studies on faculty attitudes toward online teaching may provide some understanding about this issue, which is detailed in the next section (Allen & Seaman, 2014; Dahlstrom & Brooks, 2014).

Training of faculty was reported as the third most common perceived obstacle in the present study. That variable was previously investigated in the present study, revealing that the perceived availability of faculty training for online teaching was not a significant influence on the extent of teaching online literacy courses. Nonetheless, 87.9% of literacy faculty members in the present study reported lack of faculty training is

an obstacle to a great or moderate extent. That reveals an inconsistency in their beliefs about online teaching, because most literacy faculty members perceived training was readily available at their institutions. Despite this availability, they still considered training as a considerable obstacle to teaching online courses. This complicated relation may justify more detailed research including qualitative interviews, perhaps to determine in what way the available training falls short.

Literacy faculty also reported technology-related concerns such as faculty technological skills, technical support and reliability of technology. Those results were consistent with studies reporting that technology is a primary concern of online instructors (Antonacci, 2002; Berge, 1998). Literacy faculty were considerably more concerned about their technological skills than their students' technological skills. Nevertheless, a considerable number of college students (nearly 32% on average across core technologies) were not fully confident in the technology skills (Dahlstrom, & Brooks, 2014). Findings from the present study suggest that perhaps both faculty and students need technological supports.

It is not clear why cost and resources and copyright issues were less of a concern than other obstacles to literacy faculty. The Open Educational Resources (OER) movement (Butcher, 2015) which pursue teaching and learning materials freely available online for anyone to use might reduce their concern about cost, resources, and copyright issue.

Reading textual materials, researching topics, dealing with assignment, and presenting ideas were the most common course components perceived to be well-

matched to online instruction, whereas modeling good instruction, group work, and taking exams were the least well-matched. Many other well-matched or poorly-matched course components were identified in an open-ended question in the survey (see Table 4.7). The frequent use of Learning Management Systems (LMS) might be one reason literacy faculty members perceived reading text material, researching topics, dealing with assignments, and presenting ideas well-matched to online teaching, because these components are typically made available through LMS. In fact, Dahlstrom and Brooks (2014) reported 60% faculty believe LMS is critical to their teaching. A typical online course in universities and colleges usually employ the LMS platform such as Blackboard, Moodle, or Canvas, where instructors and students easily share most course materials and other resources. The components identified as well-matched to online instruction might be those readily available to and easily incorporated into LMS platforms. For example, instructors, in the LMS platform, can easily share their recorded lectures, videos, and a list of assignments with due dates.

Likewise, modeling good instruction, engaging in group work, and taking exams are not as easily incorporated into the LMS platform. For these components, instructors might be required to use more advanced and less-readily implemented technologies. Instructors, for example, may need to ask students to contact them directly through Skype or Google Hangouts for modeling good instruction. They may need to ask students to create blogs or projects for group projects. Previous research suggests that faculty use only a few functions of the LMS such as sharing syllabus, communication with students, and recording grades (Allen, Seaman, Lederman, & Jaschik, 2012). Administrators and

those assigned to help faculty develop online courses may consider the relation between their perceptions of suitability of course components to online teaching and the LMS to support faculty to enhance their technology skills beyond the LMS.

Correlational evidence revealed that every perceived advantage on the survey was significantly correlated with the extent of online teaching. The more literacy faculty members were teaching online, the more they perceived individual and collective advantages. Making use of social media familiar to students was the weakest predictor (r_s =.16). However, with regard to frequency of use, social networking tools were the least used among twelve technological tools and activities. Further, the use of social networking tools was not significantly correlated with the extent of teaching online courses.

These results raise further questions. Why are literacy faculty members using social networking less frequently than other tools? Why is the extent of online teaching not related to the use of social networking? Why do literacy faculty perceive making use of social media familiar to students as an important advantage of online teaching and yet not use it? Those issues might be explained by previous investigations on inconsistencies between teachers' beliefs and their practices (Fang, 1996). Or, perhaps they are understood in light of Seaman and Tinti-Kane's (2013) findings identifying the various barriers to faculty use of social media in their teaching, such as integrity of student's submission, concerns about privacy, and lack of integration with LMS. Those barriers may contribute to that discrepancy between literacy faculty's perception and practices around social networking. Further, the use of social networking tools in literacy courses

was significantly associated with literacy faculty's constructivist orientation and their perceived role as a matchmaker, which was discussed previously. A more detailed study and discussion of how literacy faculty members are instantiating their beliefs about social networking in their online instruction will be needed.

Not every perceived obstacle was positively and significantly correlated with the extent of online teaching. In this study, time and resources for development was significantly correlated with the extent of online teaching. Time was perceived of lesser concern for those who were teaching more online courses. This finding is consistent with previous research revealing that faculty time required for developing online courses or first time teaching is much greater than their teachings after first time (Allen & Seaman, 2009). It also is consistent with other aspects of the current study suggesting more positive perceptions about online teaching the more faculty members engage in it.

Correlational evidence revealed that literacy faculty's perception about the suitability of course components to online courses was significantly correlated with the extent of teaching online courses for most course components on the survey item except reading articles, chapters, and other textual materials and researching topics. Even, modeling good instruction, which was reported as the least well-matched course component to online courses, was significantly correlated with the extent of online teaching. As noted in the previous paragraph, this finding suggests that literacy faculty's perception about the suitability of many course components may become more favorable toward online teaching as they teach more online courses. Simply engaging faculty in online instruction may promote more favorable views of course components. This finding

is perhaps the one of most practical and conceptual import as the result of the present study.

Literacy faculty members' perception of the suitability of discussion for use in online courses was significantly associated with the extent of teaching online courses. In this study, the use of discussion tools was also significantly correlated with the extent of teaching online courses. The strongest correlation was also reported between literacy faculty's perception of advantage of discussion and the extent of online teaching. These findings suggested that discussion may be a prominent factor that affects literacy faculty's practices, beliefs, and attitudes as well, which is discussed in the subsequent section. These findings necessitate further study addressing the effective use of online discussions, particularly in teacher education (Ajayi, 2010; Chen, Chen, & Tsai, 2009; Szabo & Schwartz, 2011), including literacy teacher education (Ryan & Scott, 2008) Further research may be needed to explain how discussions may play a major role in enhancing or changing literacy faculty's online teaching practices, their perceptions, and attitudes.

Attitudes toward Literacy Online Courses

Literacy faculty's attitudes toward online courses in general were somewhat negative. This finding was consistent with studies reporting that unfavorable attitudes toward online courses have been persistent among faculty (Allen & Seaman, 2014). Previous studies shed light on this issue.

Previous research revealed that faculty, from a general standpoint, are more negative about the quality of online learning and online pedagogy (Allen & Seaman,

2009). Faculty are more positive about the flexibility and convenience that online education provides (Dahlstrom, & Brooks, 2014). On the other aspect, faculty also have positive attitudes and dispositions toward technology in general (Bichsel, 2013) and they are increasingly embracing a variety of digital technologies (Allen, Seaman, Lederman, & Jaschik, 2012). Also, there may be many other personal influences that may lead to more positive or negative attitudes toward online education. Experience is one of those influences. For example, there are substantial differences in faculty attitudes between those who have online teaching experience and who have not (Dahlstrom, & Brooks, 2014). Dahlstrom and Brooks's (2014) finding is consistent with correlational evidence in the present study indicating that literacy faculty's attitudes toward online courses were significantly and positively associated with their extent of online teaching. Those findings from previous research suggested that faculty's attitudes may become more favorable if they have more experience with online teaching. Enriching experiences of online teaching may assuage their concerns about the quality of online teaching and learning.

This study also revealed that their attitudes toward online courses were significantly associated with their perceived advantages of online teaching. Notably, the stronger relations were more about pedagogy and learning (e.g., enhanced pedagogical options for teaching, greater interaction, and enhanced student learning). However, Allen and Seaman (2009) revealed that faculty have negative attitudes toward the quality of pedagogy and learning. Thus, administrators and those assigned to help faculty develop online courses might focus on pedagogical, learning advantages to enhance faculty's positive attitudes toward online teaching.

However, correlation does not equal causation. Thus, the relation between faculty attitudes and extent of online teaching could be the result of a third, confounding variable. Interpretations based on regression analysis, detailed in the following section, are more useful and helpful to substantiate any relation discussed thus far, and thus offer the possibility of making predictions.

Predicting Extent of Teaching Online Literacy Courses

In this study, a regression analysis was conducted to create a model for predicting the extent of teaching online courses. The regression analysis was exploratory. Predictor variables included faculty characteristics, circumstances, their beliefs, as well as their attitudes toward online courses. Results indicated that the level of teaching online courses was associated with a variety of factors: age, academic rank, use of technology, whether online teaching was required or not, prevalence of online courses, the perceived suitability of course components, and their attitudes toward online teaching. However, having a variety of significant predictors created difficulties in interpreting the result of the regression model. The difficulties are compounded by the problem that there is no research that establishes relevant factors to include when trying to predict the extent of online teaching. Nonetheless, there are a few factors that were reasonably considered here.

With that caveat, any variables at the institutional level such as technological infrastructure, institutional support, training and incentives were not significant predictors, suggesting that the extent of literacy faculty's online teaching might not be directly increased by the institutional efforts. A direct effect might be achieved by putting

a great deal of effort into attracting faculty members into online teaching at the individual level or at the academic unit level.

Particularly, the perceived advantages and the perceived obstacles of online teaching were ascertained to be insignificant influences on the extent of online teaching when other influences were combined and controlled in the regression model. They were expected to be significant predictors when each was isolated from other influences and its correlation with the extent of online teaching was investigated. These findings suggest that their correlations with the extent of online teaching may be spurious or linked complexly to other variables. The link between the extent of online teaching and their perceptions about the suitability of course components to online courses was still stable in the regression model. Administrators and those assigned to help faculty develop online courses may consider these findings that the perceptions about the suitability of course components to online courses is a more important factor in increasing the odds of faculty engaging in online teaching.

Predicting Attitudes toward Online Literacy Courses

Another regression analysis indicated that literacy faculty's attitudes toward online literacy courses were also associated with a variety of factors: technological skills, the perceived suitability, the perceived advantages, the perceived obstacles, and the extent of online teaching. Notably, any circumstantial variables did not significantly predict the attitudes toward online teaching. Instead, faculty beliefs play a major role in predicting the attitudes toward online literacy courses. These results suggest that literacy faculty's favorable attitudes toward online teaching might be affected considerably by a

positive change in their perceptions about online courses, which somewhat ironically seem related to more online teaching, creating a potential conundrum.

The total amount of the variance in their attitudes toward online courses that can be explained by those factors was considerable (53.0%). The unique variances related to technological skills, the perceived suitability, the perceived advantages, the perceived obstacles, and the extent of online teaching were 2.8%, 3.3%, 27.6%, 1.8%, and 3.6% respectively. The perceived advantages of online teaching was the overwhelmingly prominent predictor of literacy faculty's attitudes toward online courses. These results suggested that administrators and those assigned to help faculty develop online courses may productively pay more attention to effective training and development activities that enhance faculty's perceptions about advantages of teaching online courses.

Overall, previous research and evidence from the present study suggest that the extent of teaching online courses and their attitudes toward such courses are primarily the outcome of different opportunities in which multiple influences on online teaching are interacting with each other. Thus, involving literacy faculty in teaching online may require a sophisticated investigation of the influences. Many studies have reported straight correlations between the extent of online teaching or their attitudes toward online courses and various factors that may contribute to the involvement of faculty members in online teaching. However, regression analysis in the present study implied that some relations may be spurious or interact more complexly with other factors. More detailed examination of the role of various factors are needed to help literacy faculty members

prepare for teaching online successfully. The present study may lay the groundwork for the development of more research-based predictive models.

Limitations of This Study

There are several limitations in this study. One limitation is the issue of definition. It was difficult to quantify exactly the extent of literacy courses being offered online. Part of reason was that the definition of online courses may be interpreted differently across studies and various types of online courses or programs in higher educations could not be counted of equal weight. For example, some studies may only count distance-learning courses offered as a typical and regular course, while others may include any such courses that include independent study, doctoral research, or a practicum. This study estimated extent of literacy courses offered online from instructors' level of involvement in those courses. Participants were asked to indicate the extent of literacy courses they have taught or teach in an online format by self-reporting on four levels: never, hardly ever, occasionally, and regularly. In this case, selection and screening of participants became important, but also difficult because the definition of literacy or literacy faculty could also have many meanings and its meaning may be interpreted differently among many disciplines. Thus, participants in this study were asked if they considered their position or faculty role to be identified mainly with literacy education and the results of the present study are dependent on the accuracy of their self-reports.

Self-selection bias, a type of sampling bias should also be acknowledged. In this study, it may be that those who have strong opinions about online courses (e.g., those who might have taught or were teaching online courses or who declined to teach such

course) may have been more likely to participate in the study. That possibility is consistent with the fact that a relatively higher level of online teaching was reported than other disciplines. Nonetheless, selection bias might be assumed to be operating similarly in other studies as well. There might be statistical methods that mitigate this issue. For example, the extent of teaching online courses could be used as a covariate for some analysis. In these cases, we assume the covariate as a secondary variable that can affect the relationship between a predictor variable and an outcome variable of primary interest. However, based on research questions in this study, the extent of teaching online courses was first hypothesized as a main predictor variable and also as an outcome variable of primary interest. Thus, those methods were inapplicable to this study.

Another limitation of this study was that the data consisted of participants' perceptions, not their actual practice. For instance, the findings related to an instructor's role were actually based on respondents' characterization of their role as an instructor and not based on their actual practice. Observation may produce somewhat different results. Thus, the results need to be carefully interpreted.

Conclusions

First, institutions in general appeared to be less than successful in supporting literacy faculty members through training and incentives to develop, offer, and teach online courses. Although institutional efforts such as technical supports, training, and incentives were perceived to be widely available to literacy faculty members, such supports were identified as insignificant predictors to the extent of teaching online courses and their attitudes toward offering such courses. Contrary to institutional efforts,

technological skills and technology use were identified as significant predictors. In this regard, developing technological skills that can positively effect a substantial change in the extent of teaching online courses and their attitudes toward them might become a higher priority of institutional support. How would institutions of higher education effectively support the development of such skills? Administrators and those assigned to help faculty develop online courses may need to provide support for online teaching that are tailored to literacy professionals. For example, literacy faculty members, in this study, rated modeling or demonstrating good instruction as the most poorly matched course component to online teaching. However, research on this issue suggests that that end can be effectively achieved by creating instructional videos and sharing them with their students (Clarke & Watts-Taffe, 2013). To that end, literacy faculty members might be provided with support to develop their technology skills for creating and sharing instruction videos with support from instructional designers or educational technologists available at their institutions.

Second, motivation for online courses driven by administrators appeared to negatively affect the extent of literacy faculty's online teaching when it was isolated from other influences and its influence on the extent of online teaching was investigated. However, when other influences were controlled in the regression model, it was not a significant predictor. This finding is compounded by the finding that the extent of teaching online literacy courses was notably greater when literacy faculty reported being required to do so. If literacy faculty are being required to teach online courses because of administrative pressure, might that affect the quality and dedication of teaching in these

courses? That situation would be detrimental to the expanding the quality and extent of online courses and undermine a sense of dedication toward online courses. Further research is needed for investigating what motivates administrative drive for offering online courses to help administrators decide whether their academic unit requires online teaching or what kinds of incentives should be provided for online teaching. Such research could be important for the future impact of online education.

Third, literacy faculty members may need an opportunity to reflect on an inconsistency between their attitudes toward online literacy courses, their beliefs about online teaching, and their practices. In this study, literacy faculty members welcome online courses as they are making education more accessible. Despite this accessibility, literacy faculty on the whole are still skeptical toward online courses. Many do not believe any literacy courses could be taught effectively online. Many value the convenience and flexibility that online teaching may present, at the same time, they have concerns about the additional time and effort required to teach online. What might be done to overcome such inconsistency, thus making online education accessible and convenient and also deemed worthy of pursuing? This study suggests that exposure to online teaching itself may reduce this dissonance, but most likely not without confusion, efforts for adjustment, and many failures. Given that dissonance, adaptation to online teaching may need to be gradual and carefully implemented. Having more experience in teaching hybrid courses might contribute toward that end.

Finally, one caveat may need be considered. The relations among behaviors, beliefs, and attitudes have been studied intensively in the fields of social and behavioral

psychology. The conclusion is that human behavior typically reflects beliefs and attitudes. Beliefs complexly mediate the relation between behavior and attitudes. Changes in attitudes or beliefs may or may not result in changes in behavior. Changes in behavior may or may not result in changes in beliefs or attitudes. Thus, the findings of this study must be carefully applied to the current complicated practices.

APPENDICES

APPENDIX

Survey Questions

1. Do you consider your position or faculty role to be identified mainly with literacy education?
Yes
No

2. To what extent do you teach courses aimed specifically at literacy instruction (e.g., includes topics such as teaching methods, strategies, assessments, materials, etc.)?
None of my courses
Some of my courses
Many of my courses
All of my courses

3. How often have you taught, or do you teach, **ONLINE** literacy courses (courses designed to be offered almost exclusively online)?
Never
Hardly ever
Occasionally
Regularly

4. How often have you taught, or do you teach **HYBRID** literacy courses? (courses designed to blend elements of online courses and elements of conventional courses taught in a classroom).
Never
Hardly ever
Occasionally
Regularly

5. In general, how often do you employ the following online tools or activities in your courses?

	Not at all	Hardly ever	Occasionally	Frequently	I don't know or not applicable
Learning management system (e.g., Blackboard, Canvas, Web-CT, Moodle...)					

	Not at all	Hardly ever	Occasionally	Frequently	I don't know or not applicable
Real time discussion (e.g., Skype, Google Hangout...)					
Delayed discussion (e.g., Discussion board, listserv, email ...)					
Video (e.g., Youtube, Teacher Tube, Vimeo...)					
Presentation tools (e.g., PowerPoint, Keynote...)					
Visual posters (e.g., Glogster…)					
Online quizzes (e.g., Classmaker, Quizlet, Flashcard…)					
Web searching (e.g., Google, Bing, Yahoo…)					
Blogging (e.g., Blogger, WordPress…)					
Podcasts (e.g., Audacity…)					
Collaborative writing (e.g, Google Doc, Online Microsoft word…)					
Social networking (e.g., Facebook, Twitter…)					
Other 1: Specify					
Other 2: Specify					
Other 3: Specify					

6. Rate each of the following course components or activities in terms of how **well-matched** they are for teaching literacy courses online.

	Very poorly matched	Poorly matched	Well matched	Very well matched	Unsure
Modeling or demonstrating good instruction					
Discussion					
Taking exams					

	Very poorly matched	Poorly matched	Well matched	Very well matched	Unsure
Presenting ideas, concepts, principles, etc.					
Dealing with assignments (making, completing, and submitting)					
Reading articles, chapters, and other textual materials					
Researching topics					
Group work					

Other components or activities that may be **well matched** or **very well matched**:

Other components or activities that may be **poorly** or **very poorly matched**:

7. Each of the following is a possible reason for offering online literacy courses. Indicate the degree to which you believe each reason is **justifiable.**

	Not justifiable	Somewhat justifiable	Very justifiable	Unsure
Increased access to more courses by more students				
Enhanced pedagogical options for teaching				
Enhanced institutional income and stabilizing budgets				
Enhanced students' learning and/or performance regarding literacy				
Greater interaction among students				
Greater interaction between students and instructor				
Enhanced student involvement and engagement				
Makes use of social media and online resources familiar to students				

	Not justifiable	Somewhat justifiable	Very justifiable	Unsure
Greater opportunities to engage in and prepare students for using digital media				
Enhanced discussion				
Other: Specify				

8. Indicate the extent to which you believe each of the following is a **barrier, obstacle, or challenge** to teaching literacy courses online.

	Not at all	Small extent	Moderate extent	Great extent	I don't know
Cost and resources					
Training of faculty					
Students' technological skills					
Faculty technological skills					
Faculty biases against online teaching					
Technical support					
Reliability of technology					
Availability of high-quality online materials and resources					
Copyright issues					
Time and resources for development					
Other: Specify					

9. When compared to teaching conventional courses, online courses are in general,
Much less desirable
Less desirable
Neither more or less desirable
More desirable
Much more desirable
I don't know or not applicable

10. Please rate your agreement with the following statements.

Online courses are a welcome expansion of the options for teaching literacy courses.

Strongly disagree
Disagree
Agree
Strongly agree
I don't know

If asked to teach a literacy course online, I would enthusiastically agree.
Strongly disagree
Disagree
Agree
Strongly agree
I don't know

In general, online literacy courses offer advantages over conventional courses.
Strongly disagree
Disagree
Agree
Strongly agree
I don't know

After an online literacy course is developed and established, it is no more challenging or difficult to teach than traditional courses.
Strongly disagree
Disagree
Agree
Strongly agree
I don't know

Almost any literacy course could be taught effectively online.
Strongly disagree
Disagree
Agree
Strongly agree
I don't know

In the future, there is likely to be an increase in the number of literacy courses taught online.
Strongly disagree
Disagree

Agree
Strongly agree
I don't know

11. Your gender:
Male
Female

12. Your age:
20s
30s
40s
50s
60s
70s+

13. How many years have you been in higher education?
0-5
6-10
11-15
16-20
21 or more

14. Your academic rank:
Distinguished professor
Full professor
Associate professor
Assistant professor
Lecturer/Instructor
Adjunct
Other: Specify

15. At what level are the courses you teach?
All graduate courses
Mostly graduate courses
Mostly undergraduate courses
All undergraduate courses

16. In general, how skilled and knowledgeable are you in regard to using digital online technologies?
Not at all
Minimally
Moderately
Greatly

17. How often do you employ digital technologies, including online resources, across all of the courses you teach?
Not at all
Occasionally
Frequently
Always

18. My overall orientation to teaching literacy courses is...
Traditional
(e.g., lecture/ required text and readings/ objective exams)
Somewhat traditional
(e.g., lecture/ discussion/ activities/ required and optional readings/ objective and subjective items on exams)
A mix of a traditional and constructivist orientation
(e.g., lecture/ demonstrations/ activities/ student presentations/ independent student projects/ essay exams)
Somewhat constructivist
(e.g., minimal lecture/much discussion/ small-group activities/ independent research/ students choose from a list of optional readings/optional exam or project)
Highly constructivist
(e.g., student-generated topics/ self-evaluation (no-exam)/ independent or group research of topic of interest/ creative products)
Other:Specify

19. To what extent do each of the following capture how you perceive your role as an instructor:

	Not at all	Small extent	Moderate extent	Great extent
Knowledgeable expert				
Facilitator				
Organizer/Manager(instructional materials and activities)				

	Not at all	Small extent	Moderate extent	Great extent
Provocateur/Problematizer				
Role model				
Demonstrator				
Evaluator/Screener				
Counselor/Guide/Adviser				
Content provider				
Talent recognizer/developer				
Shaper of perspectives/orientations/values				
Matchmaker(connecting students with relevant people and sources)				
Discussion leader				
Other:Specify				

20. In my ACADEMIC UNIT, the motivation for developing and offering online courses most often originates from:
Faculty
Administrators
Students
Other: Specify
I don't know or doesn't apply

21. In my ACADEMIC UNIT online teaching is
Required
A negotiation between faculty and administrators
Mostly voluntary
Completely voluntary
I don't know or doesn't apply

22. To what extent does your ACADEMIC UNIT provide guidance and direction for developing, offering, and teaching online courses?
Not at all
Small extent
Moderate extent
Great extent
I don't know or doesn't apply

23. To what extent are literacy courses in your ACADEMIC UNIT offered online?
Not at all
Small extent
Moderate extent
Great extent
I don't know or not applicable

24. Which of the following best describes your INSTITUTION?
Very High research activity
High research activity
Low research activity (but awards doctoral degrees)
Masters only
Undergraduate only
Other: Specify

25. How prevalent are online courses at your INSTITUTION as a whole?
No online courses
Hardly any online courses
A few online courses
Many online courses
Very many online courses
Not applicable or I don’t know

26. To what extent is there technological infrastructure and support for developing and teaching online courses at your INSTITUTION?
Not at all
Small extent
Moderate extent
Great extent
I don't know or not applicable

27. To what extent does your INSTITUTION provide support for planning and developing online courses?
Not at all
Small extent
Moderate extent
Great extent
I don't know or not applicable

28. Does your INSTITUTION offer training for teaching online courses?
Yes
No
I don't know or not applicable

29. Click any of the following that are incentives provided by your INSTITUTION for online teaching.
My institution provides no incentives for online teaching
Increased salary or salary supplements
Graduate students' assistance
Extra travel funding
Reduction in teaching load
Advancement toward tenure and/or promotion
Additional support from staff
Summer employment
Others: Specify

30. OPTIONAL: If you would like to receive a preliminary, pre-publication summary of the results of this survey, please enter your email address in the box below. Email addresses will be compiled separately and not linked to responses.

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